

**Managing environmental education curriculum through distributed leadership
strategies in the KwaZulu-Natal secondary schools**

by

NONKANYISO PAMELLA SHABALALA

Submitted in accordance with the requirements for the degree of

DOCTOR OF PHILOSOPHY

In the subject

ENVIRONMENTAL EDUCATION

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: DR HN HEBE

CO-SUPERVISOR: PROF. LE MNGUNI

04 September 2022

DECLARATION

Student number: 49634062

I, *Nonkanyiso Pamela Shabalala*, hereby declare that this thesis which is submitted to the University of South Africa for a Doctoral degree in Education has not been submitted by me for any other degree at this or any other university. I further declare that this research is my own work, and that all the sources that I have quoted have been indicated and acknowledged by means of complete references.

Signature:  _____

Date: 03 SEPTEMBER 2022

DEDICATION

Isaiah 60:22 “When the Time is right I, the Lord will make it happen”

All praise and honour is due to you Lord.

- I owe gratitude to the hills and rivers of Mthwalume where I was born and raised. It is true when they say, a child is brought up by the community.
- My late father, Thembinkosi Robert Shabalala, I know you would be so proud of this achievement.
- My mother, Nomasonto Prisca Shabalala, I owe you a lot for taking care of me and my children. You came through for me when I could not be there for myself.
- My children (Snothile, Swelihle & Nalenhle) and my siblings (Noxolo, Sboniso & Philasande Shabalala), I owe you a world of candy for being so patient and holding my hand.

ACKNOWLEDGEMENTS

I would like to thank the following people for their support and guidance in nurturing me to become a better researcher.

- ❖ Prof LE Mnguni for the academic support and guidance throughout this journey. Everytime, after my interaction with you, I would be more motivated and rejuvenated. I will always remember to think like a scientist just like you suggested. Thank you for instilling a mindset of Excellency.
- ❖ Dr HN Hebe for your support and understanding even when I was losing my mind. Thank you for listening to my whining all the time. I would be unfair if I do not acknowledge the constructive feedback that you always provided me with a little scolding here and there.
- ❖ The financial assistance of the National Institute for the Humanities and Social Sciences, in collaboration with the South African Humanities Deans Association towards this research is hereby acknowledged. Opinions expressed and conclusions arrived at are those of the author and are not necessarily to be attributed to the NIHSS and SAHUDA.
- ❖ The Department of Basic Education and the sampled schools, I appreciate that they allowed me to conduct the research in their schools and allowing me to work with the participants during working hours.
- ❖ The participants for agreeing to work with me and sparing time on their busy schedules.
- ❖ The late Dr Cebisa, for the friendly and academic support he offered me until his last day.
- ❖ The late Mr Mduduzi Joyful Miya, for laying a foundation on my academic life. I remember how you encouraged and motivated me to study further. Your words and prophesies will always live in me and I know you tried to hold on to see this day.
- ❖ My friends for the support and understanding.

ABSTRACT

Environmental education is a process that allows individuals to explore environmental issues, engage in problem-solving and take action to improve the environment. As a result, individuals develop a deeper understanding of environmental issues and have the skills to make informed and responsible decisions through environmental education. Therefore, environmental education is an important aspect of the school curriculum as it is embedded in the school's curriculum of other subjects. In South Africa, subjects such as natural sciences (NS), mathematics, geography and so on are tracked and managed by those designated to do so, both at the school level and by the subject advisors of the department of education. However, the case is different from the environmental education content. This research explores strategies that are available to manage environmental education through distributed leadership by subject advisors, principals, school management teams (deputy principals and/or head of departments) and teachers. This research adopted a constructivism research paradigm, and employed a qualitative research approach, descriptive case study research design, non-probability sampling which is purposive in nature, individual interviews, observation, and document analysis as data collection tools. The population that contributed to the understanding of distributed leadership in schools in this research are three principals, three SMT members, three teachers, in three schools and two subject advisors in one district. The findings of this research point out that there are no strategies in place to manage environmental education as it is giving less attention as compared to other subject's content due to the context of its content, lack of motivation from superiors as there is no empowerment through decision making taken collectively and roles are not distributed to all stakeholders. There is a lack of communication between stakeholders as there is no transparency and staff members are told what to do instead of having effective discussions. The curriculum is theoretical instead of practical which promotes participation. Distributed leadership seems to not be understood as the principals and the SMTs seem to practice delegation and confuse delegation with distributed leadership. Environmental education is also not tracked at a school level or at a departmental level. I can conclude by saying that environmental education is viewed as unimportant as it is not comprehended as something which adds value to a learner's knowledge. Again, distributed leadership is not met in terms of environmental education management in schools. The findings of this research also involve a developing an environmental education model in the educational sector which made

use of the strategies that might help in managing environmental education curriculum. Therefore, it is recommended that the content of environmental education is restructured to cater for practicality to best suit the current lifestyles. It is also recommended that all stakeholders are involved rather than thinking the management of environmental education is a sole responsibility of a teacher and be involved in the development and decision making in terms of the management of environmental education. Especially, since the world is experiencing a global crisis, it is recommended that we do not only aspire to a just community, but a society that is able to combat all global crises at an early stage to live in a sustainable community.

Key words: environmental education, environmental education management, distributed leadership, transformational leadership, and strategies.

I-ABSTRACT

Imfundo yezemvelo iyinqubo evumela abantu ukuba bahlole izindaba zemvelo, bazibandakanye ekuxazululeni izinkinga, futhi bathathe izinyathelo zokuthuthukisa imvelo. Ngenxa yalokho, abantu ngabanye bahlakulela ukuqonda okujulile ngezindaba zemvelo futhi babe namakhono okwenza izinqumo ezinolwazi nezinomthwalo wemfanelo ngemfundo yezemvelo. Ngakho-ke, lokho kwenza imfundo yezemvelo ibe yisici esibalulekile sekharikhulamu yesikole njengoba igxilile ohlelweni lwezifundo lwesikole lwezinye izifundo. ENingizimu Afrika, izifundo ezifana nesayensi yemvelo (NS), mathematics, geography nokunye, zilandelwa futhi ziphathwe yilabo abaqokelwe ukwenza lokho, ezingeni lesikole kanye nangabeluleki bezifundo bomnyango wezemfundo. Nokho, icala lihlukile ngokuqokethwe kwemfundo yezemvelo. Lolu cwaningo luhlose ukuhlola amasu akhona okuphatha imfundo yezemvelo ngobuholi obusabalalisiwe ngabeluleki bezifundo, othishanhloko, amathimba okuphatha izikole (amaphini othishanhloko kanye/noma izinhloko zeminyango) kanye nothisha. Lolu cwaningo lwamukele ipharadigm yocwaningo lwe-constructivism, indlela yocwaningo lwekhwalthethivu, idizayini yocwaningo lwendaba echazayo, amasampula okungewona okungenzeka anenhloso ngokwemvelo, inhlolekhono yomuntu ngamunye, ukubhekwa, nokuhlaziywa kwemibhalo njengamathuluzi okuqoqa idatha. Inani labantu elibambe iqhaza ekuqondeni ubuholi obusabalalisiwe ezikoleni kulolu cwaningo yilaba: othishanhloko abathathu, amalungu amathathu e-SMT, othisha abathathu, ezikoleni ezintathu nababili abeluleki bezifundo esifundeni esisodwa. Okutholwe kulolu cwaningo kukhomba ukuthi awekho amasu okuphatha imfundo yezemvelo njengoba inika ukunaka okuncane uma iqhathaniswa nezinye izifundo ngenxa yengqikithi yalo, ukuntula ugqozi oluvela kubaphathi njengoba kungekho ukuhlonyiswa ngokuthathwa kwezinqumo. ezithathwe ngokuhlanganyela kanye nezindima ezingasatshalaliswanga kubo bonke ababambiqhaza. Ukuxhumana okungagciniwe phakathi kwabathintekayo njengoba kungekho obala futhi abasebenzi bayatshelwa ukuthi benzeni esikhundleni sokuba nezingxoxo ezisebenzayo. Ikharikhulamu iyithiyori kunokuba ibe yinto ephathekayo ekhuthaza ukubamba iqhaza. Ubuholi obuhlukene bubukeka bungaqondwa njengoba othishanhloko kanye nama-SMT bebonakala bezilolongela izithunywa futhi badida ithimba nobuholi obuhlukene. Imfundo yezemvelo nayo ayilandelelwa ezingeni lesikole kanye nezinga lomnyango. Ngingaphetha ngokuthi imfundo yezemvelo ithathwa njengengabalulekile njengoba ingaqondwa njengento

eyengeza ukubaluleka kolwazi lomfundi. Nakulokhu, ubuholi obusabalalisiwe abuhlangatshezwana nokuphathwa kwemfundo yezemvelo ezikoleni. Okutholwe kulolu cwaningo kuhlenganisa nokuthuthukiswa kwemodeli yemfundo yezemvelo emkhakheni wezemfundo owenziwe ngamasu angasiza ekulawuleni ikharikhulamu yemfundo yezemvelo. Ngakho-ke, kunconywa ukuthi okuqukethwe kwemfundo yezemvelo kuhlelwe kabusha ukuze kuhlinzekelwe ukusebenza ukuze kuhambisane kangcono nezitayela zamanje ezinempilo. Kuyatuswa futhi ukuthi bonke ababambiqhaza babambe iqhaza kunokuba bacabange ukuthi ukuphathwa kwemfundo yezemvelo kuwumthwalo wemfanelo kathisha kuphela futhi babambe iqhaza ekuthuthukisweni nasekuthathweni kwezinqumo mayelana nokuphathwa kwemfundo yezemvelo. Ikakhulukazi, njengoba umhlaba ubhekene nezinkinga zomhlaba wonke, kunconywa ukuthi singafisi nje umphakathi onobulungiswa, kodwa umphakathi okwazi ukulwa nazo zonke izinkinga zomhlaba kusenesikhathi ukuze uhlale emphakathini osimeme.

Amagama abalulekile: imfundo yezemvelo, ukuphathwa kwemfundo yezemvelo, ubuholi obusabalalisiwe, ubuholi bezinguquko, namasu.

NAGANWAGO

Thuto ya tikologo ke tshepedišo yeo e dumelelago batho ka bomong go hlahloba ditaba tša tikologo, go tsenela tharollo ya mathata le go tšea magato a go kaonafatša tikologo. Ka lebaka leo, batho ka bomong ba hlagolela kwešišo ye e tseneletšego ya ditaba tša tikologo gomme ba na le bokgoni bja go tšea diphetho tše di nago le tsebo le tše di nago le maikarabelo ka thuto ya tikologo. Ka fao, thuto ya tikologo ke karolo ye bohlokwa ya kharikhulamo ya sekolo ka ge e tsentšwe ka gare ga kharikhulamo ya sekolo ya dithuto tše dingwe. Mo Afrika Borwa, dithuto tša go swana le mahlale a tlhago (NS), dipalo, thutafase bjalobjalo di latišišwa le go laolwa ke bao ba kgethilwego go dira bjalo, bobedi maamong a sekolo le ke baeletši ba dithuto ba kgoro ya thuto. Le ge go le bjalo, taba ye e fapane le diteng tša thuto ya tikologo. Nyakišišo ye e hlahloba maano ao a lego gona go laola thuto ya tikologo ka boetapele bjo bo phatlalatšwago ke baeletši ba dithuto, dihlogo tša dikolo, dihlopha tša taolo ya dikolo (batlatšadihlogo tša dikolo le/goba hlogo ya dikgoro) le barutiši. Nyakišišo ye e amogetše mohlala wa nyakišišo ya constructivism, gomme ya šomiša mokgwa wa nyakišišo ya boleng, tlhamo ya nyakišišo ya nyakišišo ya mohlala ye e hlalošago, go tšea mehlala yeo e sego ya kgonagalo yeo e nago le morero ka tlhago, dipoledišano tša motho ka o tee ka o tee, go lebelela, le tshekatsheko ya ditokomane bjalo ka didirišwa tša kgoboketšo ya datha. Baagi bao ba bilego le seabe go kwešišo ya boetapele bjo bo phatlalatšwago dikolong nyakišišong ye ke dihlogo tše tharo, maloko a mararo a SMT, barutiši ba bararo, dikolong tše tharo le baeletši ba babedi ba dithuto seleteng se tee. Dikutollo tša nyakišišo ye di laetša gore ga go na maano ao a lego gona a go laola thuto ya tikologo ka ge e fa šedi ye nnyane ge e bapetšwa le diteng tša thuto ye nngwe ka lebaka la seemo sa diteng tša yona, go hloka tlhohleletšo go tšwa go bao ba phagamego ka ge go se na maatlafatšo ka sephetho go dira gore go tšewe ka kopanelo gomme dikarolo ga di abja go bakgathatema ka moka. Go na le tlhaelelo ya kgokagano magareng ga bakgathatema ka ge go se na go ba pepeneneng gomme maloko a bašomi a botšwa gore ba dire eng go e na le go ba le dipoledišano tše di šomago gabotse. Kharikhulamo ke ya teori go e na le ya tirišo yeo e tšwetšago pele go tšea karolo. Boetapele bjo bo phatlalatšwago bo bonala bo sa kwešišwe ka ge dihlogo tša dikolo le di-SMT di bonala di itlwaetša go abela le go gakantšha go abela le boetapele bjo bo phatlalatšwago. Thuto ya tikologo le yona ga e latišišwe maamong a sekolo goba maamong a kgoro. Nka phetha ka go bolela gore thuto ya tikologo e lebelelwa e le yeo e sego bohlokwa ka ge e sa kwešišwe bjalo ka selo seo se oketšago mohola tsebong ya moithuti.

Le mo, boetapele bjo bo phatlalatšwago ga bo fihlelelwe go ya ka taolo ya thuto ya tikologo dikolong. Dikutollo tša nyakišišo ye di akaretša gape le go hlabolla mohlala wa thuto ya tikologo ka lefapheng la thuto seo se dirilego tšhomišo ya maano ao a ka thušago go laola kharikhulamo ya thuto ya tikologo. Ka fao, go šišinywa gore diteng tša thuto ya tikologo di rulaganywe leswa go hlokomela go šoma go swanela gabotse mekgwa ya bjale ya bophelo. Gape go šišinywa gore bakgathatema ka moka ba amege go e na le go nagana gore taolo ya thuto ya tikologo ke maikarabelo a morutiši a nnoši gomme ba amege tlabollong le go tšea diphetho go ya ka taolo ya thuto ya tikologo. Kudukudu, ka ge lefase le itemogela mathata a lefase ka bophara, go šišinywa gore re se ke ra labalabela fela setšhaba sa toka, eupša setšhaba seo se kgonago go lwantšha mathata ka moka a lefase ka bophara e sa le ka pela gore se phele setšhabeng sa go ya go ile.

Mantšu a bohlokwa: thuto ya tikologo, taolo ya thuto ya tikologo, boetapele bjo bo phatlalatšwago, boetapele bja phetogo, le maano.

Table of Contents

DEDICATION	iv
ACKNOWLEDGEMENTS	v
ABSTRACT	vi
LIST OF FIGURES	xix
LIST OF TABLES.....	xx
1. LAYING THE FOUNDATIONS OF THIS RESEARCH	1
1.1 PREFACE OF THIS RESEARCH.....	1
1.2 ACCOUNT OF PREDICAMENTS	6
1.2.1 Research Questions:	8
1.2.2 Aim and objectives:	9
1.3 RESEARCH JUSTIFICATION	9
1.4 RESEARCH SETTING	10
1.5 INSTRUMENTS OF RESEARCH	12
1.5.1 Research Paradigm	13
1.5.2 Research Approach.....	13
1.5.3 Research Design	13
1.5.4 Population and Sampling	13
1.5.5 Data collection and analysis methods.....	14
1.6 QUALITY ASSURANCE	14
1.7 RESEARCH ETHICS	14
1.7.1 Permission to conduct the study	15
1.7.2 Informed consent from participants.....	15
1.7.3 Anonymity and confidentiality	15
1.7.4 Balancing principles of beneficence and non-maleficence	15

1.7.5	Autonomy and dignity of participants	16
1.8	DEFINITION OF KEY CONCEPTS.....	16
1.8.1	Curriculum	16
1.8.2	Curriculum Development.....	16
1.8.3	Subject Advisors	16
1.8.4	Curriculum Management.....	16
1.8.5	Environmental Education.....	17
1.8.6	Leadership	17
1.8.7	Distributed Leadership	17
1.8.8	Transformational Leadership	17
1.8.9	School Management Team (SMT)	18
1.8.10	Curriculum and Assessment Policy Statement (CAPS)	18
1.9	CHAPTER OUTLINE	18
1.10	SUMMARY	19
2.	THE THEORETICAL BACKGROUND UNDERPINNING THIS RESEARCH	20
2.1	INTRODUCTION	20
2.2	THEORETICAL FRAMEWORK.....	20
2.2.1	Transformational Leadership Theory	21
2.2.2	Distributed leadership theory	35
2.2.3	Social constructivism theory	45
2.3	THEORETICAL FRAMEWORK OF THIS RESEARCH	48
2.4	SUMMARY	50
3.	THE SYNTHESIS OF ARGUMENTS ON ENVIRONMENTAL EDUCATION IN THE SPECTRUM OF DISTRIBUTIVE AND TRANSFORMATIVE LEADERSHIP	51
3.1	INTRODUCTION	51

3.2 THE DEFINITION OF ENVIRONMENTAL EDUCATION	52
3.2.1 Environment.....	52
3.2.2 Education.....	54
3.2.3 Environmental Education.....	55
3.3 THE IMPORTANCE OF ENVIRONMENTAL EDUCATION INTEGRATION IN PEDAGOGY	58
3.4 MODELS OR APPROACHES OF ENVIRONMENTAL EDUCATION INTEGRATION	59
3.5 THE HISTORY AND EVOLUTION OF ENVIRONMENTAL EDUCATION	61
3.5.1 The history and evolution of the concept of environmental education in the international context.....	62
3.6 THE CONCEPT OF SCHOOL CURRICULUM MANAGEMENT	70
3.6.1 Defining management and curriculum	70
3.6.2 Curriculum management definition.....	71
3.6.3 The management and implementation of the school curriculum in South Africa: Implications of distributed leadership in environmental education	75
3.7 THE SUSTAINABLE DEVELOPMENT GOALS: THEIR SIGNIFICANCE IN THE ENVIRONMENTAL EDUCATION CURRICULUM	80
3.7.1 The sustainable development goals	80
3.7.2 The role of education in sustainable development	83
3.7.3 The significance of sustainable development goals in environmental education curriculum.....	84
3.8 SUMMARY OF THE CHAPTER	87
4. SCIENTIFIC ENQUIRY METHODS	88
4.1 INTRODUCTION	88
4.2 RESEARCH METHODOLOGY	88

4.2.1 Benefits of research methodology	89
4.3 RESEARCH PARADIGM	90
4.3.1 Different Types of Research Paradigms	91
4.3.2 Elements of a Research Paradigm	94
4.4 RESEARCH APPROACH	97
4.4.1 Different types of Research Approaches	97
4.5 RESEARCH DESIGN	104
4.5.1 Different types of research designs	105
4.5.2 Case Study	107
4.6 POPULATION AND SAMPLING	108
4.6.1 Non- Probability Sampling	108
4.7 DATA COLLECTION PROCEDURE	109
4.8 DATA COLLECTION METHODS	113
4.8.1 Individual interviews	114
4.8.2 Document analysis	115
4.8.3 Observation	116
4.9 DATA ANALYSIS METHODS AND INTERPRETATION	117
4.9.1 Thematic Analysis	118
4.10 ETHICAL CONSIDERATION	119
4.10.1 Permission to conduct research	119
4.10.2 Informed consent from participants	119
4.10.3 Anonymity and confidentiality	120
4.10.4 Balancing principles of beneficence and non-maleficence	120
4.10.5 Autonomy and dignity of participants	121
4.11 QUALITY ASSURANCE OF DATA	121

4.11.1 Credibility	122
4.11.2 Transferability	122
4.11.3 Confirmability	122
4.11.4 Dependability	123
4.11.5 Triangulation	123
4.12 SUMMARY OF THE CHAPTER	123
5. PRESENTATION OF RESULTS	124
5.1 INTRODUCTION	124
5.2 DESCRIPTION OF CASES AND CODES	124
5.3 PRESENTATION OF RESEARCH RESULTS	125
5.3.1 Evidence from Interviews	125
5.3.2 Evidence from Observations	143
5.3.3 Evidence from Document analysis	147
5.4 SUMMARY OF THE CHAPTER	155
6. REFLECTION OF THE RESEARCH FINDINGS	156
6.1 INTRODUCTION	156
6.2 THEME 1: DESCRIPTION OF LEADERSHIP AND THE ROLES OF A LEADER	
157	
6.2.1 Description of leadership	158
6.2.2 The description of the role of a leader	160
6.2.3 Different styles of leadership	170
6.2.4 Familiarity with distributive and transformative leadership in schools	176
6.2.5 Distribution of roles to effect transformation	177
6.2.6 Relationships existing in schools	179
6.2.7 Integration and implementation of environmental education in school	183

6.3 THEME 2: IMPEDIMENTS OF DISTRIBUTED LEADERSHIP WHEN MANAGING CURRICULUM IN SCHOOLS	187
6.3.1 Impediments of curriculum management.....	188
6.3.2 Opportunities of environmental education curriculum management	191
6.4 THEME 3: EFFECTIVE STRATEGIES TO MANAGE SCHOOL CURRICULUM	192
6.4.1 Strategies to manage environmental education curriculum through distributed leadership.....	194
6.4.2 Strategies to be adopted to manage environmental education curriculum	204
6.5 NEW INSIGHT	209
6.6 SUMMARY OF THE CHAPTER	210
7. THE SYNOPSIS OF FINDINGS, CONNECTION AND DEDUCTION OF THIS RESEARCH.....	211
7.1 INTRODUCTION	211
7.2 RESEARCH OVERVIEW	211
7.3 SUMMARY OF THE FINDINGS	213
7.3.1 What is the role of school principals, school management teams (SMTs), teachers and departmental officials in managing environmental education curriculum?	213
7.3.2 What are the challenges and opportunities of school principals, department officials, teachers, and School Management Teams (SMT) in achieving distributed leadership in the environmental education curriculum?	213
7.3.3 What strategies, contribute to successful distributed leadership in schools to manage environmental education curriculum?	214
7.4 IMPLICATIONS OF THIS RESEARCH.....	214
7.5 CONTRIBUTION OF THIS RESEARCH.....	215
7.6 RECOMMENDATIONS	215
7.7 CHALLENGES	216
7.7.1 Selection of participants	216

7.8 CONCLUSION.....	216
REFERENCES.....	218

LIST OF FIGURES

Figure 1.1: The geographical area of Kwa-Zulu Natal	11
Figure 1.2: The estimated population of Kwa-Zulu Natal	12
Figure 2.1: Elements of Transformational Leadership Theory (Bass, 1985; Tefera, 2018; Reza, 2019)	26
Figure 2.2: Graphical theoretical framework	49
Figure 3.1: The major components of the environment (Coman & Cioruta, 2019)	53
Figure 3.2: Components of environmental education (IUCN, 1970)	86
Figure 6.1	85
Figure 6.2: Sustainability (Bailey, n.d)	85
Figure 6.3: The components of environmental education (The United States Environmental Protection Agency, 2021)	205
Figure 6.4: Environmental Education Curriculum Management Model	210

LIST OF TABLES

<i>Table 3.1: The major components of the environment (Coman & Cioruta, 2019)</i>	81
<i>Table 4.1: Research methods of this research</i>	89
<i>Table 4.2: Stages for collection of data among principals, SMT members, teachers, and subject advisors in KZN secondary schools)</i>	109
<i>Table 4.3: Steps of data analysis</i>	118
<i>Table 5.1: Table of cases and participants</i>	125

1. LAYING THE FOUNDATIONS OF THIS RESEARCH

“Education is the most powerful weapon which you can use to change the world”

NELSON MANDELA

1.1 PREFACE OF THIS RESEARCH

The first black president of South Africa, Nelson Mandela, argued that education is the most powerful weapon to transform the world (Agrawal, 2020; Mandela, n.d.). Education has since been derived as a tool to transform the livelihood of humans. It is important to note that, to change the world, intellect, behaviour, and action must be in sync to transform the world to be a better place. Agrawal (2020) avers that education is one of the basic needs of human beings, just like every human needs oxygen to survive in the world. Education is important because it gives people the knowledge and skills that they require to survive.

With the right education system, people can use the acquired skills and knowledge to practice preservation towards the environment. I believe that education should guide people in terms of how they behave, their lifestyles and how they treat nature and the world they live in. The South African Bill of rights states that everyone has a right to education, and education should be compulsory for elementary education (The Constitution, 1996). In support, my view is that people should receive knowledge that is beneficial to them, and such knowledge should address the challenges faced by the world. For the interest of this research, such knowledge should address environmental issues that the whole world is undergoing.

Countless environmental challenges affect many parts of the world, including South Africa (Dunlap & Jorgenson, 2017; Mathee, 2011; Valavanidis, 2019). These challenges include crises, such as deforestation, desertification, pollution, global warming, drought, population growth, waste production, genetic modification of crops and the loss of biodiversity, which is affecting almost 90% of communities globally (Bentley, 2013; Mabogunje, 1998; Smith, 2015; Oosthoek & Gills, 2007). Smith (2015) asserts that South Africa has mined its countryside for more than a century and that the long legacy of mining has taken a significant toll on the country’s environment. Other sources of environmental issues in South Africa include

agricultural practices and a lack of inland water. I contend that these challenges pose health challenges to humans on the planet earth. In line with the observation made by the World Health Organisation (2016) that 13 million deaths globally are attributed to an unhealthy environment. 36% of these deaths are children from 0-14 years globally.

Humans are the major contributing factor to the deterioration of the environment because they do not understand the impact of their behaviour on the environment (Maurya et al., 2020; Sorqvist & Langeborg, 2019). Over the years, researchers have conducted studies of a mechanism that can be implemented to educate citizens about their environment. Jean-Jacques Rousseau is credited for being the first person to call for an educational approach that focuses on the environment (McCrea, 2006). Some years later, in the 1960s, the call made by Rousseau gained momentum, with more scholars recognising the importance of an environmental-inclined education (Erhabor & Don, 2016; Edsand & Broich, 2020; Ganta et.al, 2018; Tlhagale, 2004).

The primary purpose of environmental education is to develop environmentally literate citizens (Frazen, 2017) through, among other things, teaching the citizens about the natural environment, its functions and how people can manage their actions towards the environment (Edsand & Broich, 2020; Erhabor & Don, 2016). I would like to argue that the purpose of environmental education should not only to develop environmentally literate citizens, but ambassadors who put into practice what they have learnt and become motivated to adopt environmental knowledge and practice as a lifestyle. Ideally, the best approach to environmental education is that it should be implemented in various situations, which include formal, non-formal and informal settings at all levels of education (Ardoin et al, 2020; Erhabor & Don, 2016; Radeiski, 2009 and, thus, enable the participation of various stakeholders in managing environmental education curriculum.

However, empirical evidence suggests that formal school settings are the primary places where environmental education is presented. Teachers are the critical agents of environmental education curriculum implementation (Conde & Sanchez, 2010; Matshe, 2001). There is empirical evidence to suggest that, in many schools where environmental education is implemented, teachers are on their own (i.e., they do not receive support), and they lack resources to support the implementation of environmental education (Loubser & Simalumba,

2016; Kalimaposo & Muyela, 2014; Shabalala, 2019). With the above view of Conde and Schez (2010) and Matshe (2001), however, I disagree with the formal school setting as the primary place for environmental education. This is because the learner gets exposed to teaching at an early age at home through informal education facilitated by their parents or society members.

Apart from the key role played by teachers, the implementation of environmental education also depends on the design or structure of the school curriculum. In essence, if environmental education is to be implemented, the school curriculum should provide this possibility (Motshegoa, 2006; Mokhele, 2007). This means that the department of basic and higher education must be evident and practically driven to cater for the integration and implementation of environmental education. In most countries where environmental education is implemented, such as Australia, Sweden, and Netherland, etc., the school curricula provide environmental learning (Gunduz & Erdogus, 2017; Strokes et al, 2001).

Like the school curricula of various countries where environmental education is accommodated (Chadwick, 1999; Mosidi, 1999), the South African public-school curriculum makes provision for integrating environmental learning into various school subjects. As I shall demonstrate later in this discussion, this provision is evident in the contents of various school subjects in the Curriculum Assessment Policy Statement (CAPS) which is currently implemented by the Department of Basic Education (DBE). The CAPS provides teachers with detailed guidelines of what to teach and assess on a grade by grade and subject by subject basis, and it also gives clear guidance on assessment guidelines.

Each of the different curriculum ‘versions’ that have been adopted in post-1994 South Africa, such as, the Curriculum 2005, also known as the Outcomes Based Education (OBE), Revised National Curriculum Statement (RNCS) and National Curriculum Statement (NCS) to improve the teaching and learning process, has sought to promote the teaching of environmental education in schools through integration in the contents of, virtually, all school subjects, including subjects such as natural sciences, physical sciences and so on. However, various processes and engagements/interactions between various stakeholders took place before the infusion of environmental education into the RSA curriculum could be realised. Mosidi (1997) states that the first attempt to include environmental education in formal education resulted

from the process that led to the drafting and passing of the White Paper on Environmental Education in 1989. The White Paper proposed and outlined goals and objectives in line with the guidelines adopted in Stockholm (1972), Belgrade (1975) and Tbilisi (1977) (Le Grange & Reddy, 1997). Therefore, in South Africa, environmental education was formally initiated through the school curriculum in 1989 (Mokhele, 2011).

Peden (2009) mentions that environmental education was introduced into the formal school curriculum as a whole and not as a subject after 1994. According to earlier views on environmental education, the bio-physical dimension of the environment was synonymous with the “environment” (Mosidi, 1999). The 1995 white paper on education and the South African Constitution, which was officially adopted in 1996, each of the curricula implemented commencing with Curriculum 2005, introduced in 1997, up to the curriculum currently in implementation, popularly known as the Curriculum and Assessment Policy Statement (CAPS); the South African national department of basic education (DBE) has always made provision for the inclusion of environmental learning in the school curriculum.

Even though the CAPS advocates for environmental education, empirical evidence suggests that many challenges hamper the implementation of environmental education in South Africa and other parts of the world (Hebe, 2019; Ham & Sewing, 1988). These challenges include the following: inadequate knowledge about the environment and environmental issues, lack of implementation workshops inability to generate a whole-school approach to active environmental learning, and lack of support on the part of school management in respect of the introduction of environmental learning into the curriculum, lack of support and assistance on the part of teachers in respect of the implementation of environmental education, lack of support materials, lack of funds with which to purchase learning support materials, lack of information from the curriculum development unit; attitudes of teachers, a lack of facilities, time constraint and inappropriate class size (Le Roux & Maila, 2004; Ketlhoilwe, 2003; Bacon & Ziepniewski, 2017; Ham & Sewing, 1988; Rahman et al, 2018; Joseph, 2014; Mathenjwa, 2014). Based on the preceding summation, there are many challenges that seem to hinder the implementation of environmental education.

Apart from highlighting impediments to environmental education, numerous scholars also provided recommendations on how these challenges could be addressed (Mathenjwa, 2014;

Ketlhoilwe, 2003). One of the recommendations is that distributed leadership could be used to facilitate curriculum reform, particularly in teaching environmental education–inclined topics (Avissar et al, 2017). The concept of distributed leadership is described as the purpose of increasing the leadership capacity within a school so that the school can improve and grow authentically, with no tricks, stunts, or game-playing (Solly, 2018). This is attributed to the success of distributed leadership in numerous areas within the sphere of education and is seen as one form of leadership that is prominent in the current educational discourse (Shava & Tlou, 2018).

Distributed leadership is one of the successful leadership styles in primary and secondary schools as it improves the leadership conditions of the schools (Dampson et al, 2018). This is because distributed leadership advocates for an equal distribution of responsibilities among the various role players in a school setting, and no one should lag behind (Dampson et al, 2018). In concurrence, Harris (2008) states that the benefits of distributed leadership include, among other things, collaboration amongst staff members for the betterment of the organization. In agreement with the above points, I believe that through distributed leadership, schools can improve collaboration and engagement between co-workers.

Similarly, organizational commitment has also been identified as crucial in determining and influencing organizational outcomes (Shah & Al-Bargi, 2013). Based on the successes of distributed leadership in other parts of the world within the sphere of education (Dampson et al, 2018), it is, therefore, my view that distributed leadership needs to be considered as one of the vehicles through which environmental education could be managed and implemented in South African schools. Accordingly, within distributed leadership, principals, school management teams, teachers, parents, and education department officials should strive for a common purpose and, thus, work cooperatively towards the meaningful implementation of environmental education in South African schools. This research explores the application of distributed leadership in the management and implementation of environmental education in selected South African schools.

The current research explores the strategies available to manage environmental education in secondary schools to lead to innovation from knowledge acquired through environmental education. The current study argues the importance of stakeholder involvement in distributing

roles to manage the curriculum of environmental education in schools, which might benefit all citizens by enabling them to live in a just society where our environment is challenges-free.

1.2 ACCOUNT OF PREDICAMENTS

The teaching of all school subjects in South African public schools is tracked and managed by school stakeholders at the school level and by the Department of Basic Education officials. However, the curriculum of all school subjects is managed and tracked through the monitoring of teachers' and student's books, compared with the annual teaching plan (Mngomezulu, 2015). However, the case is different from the environmental education content, as the content of other school subjects is monitored. This is evident from various studies that were conducted, particularly with the view to investigating the implementation of environmental education at the school level (Rahman et.al, 2018; Mokhele, 2007; Shabalala, 2019). Different authors found that in South Africa and other parts of the world where environmental education is implemented, there is no clarity on how environmental education should be implemented in the formal education system (Mokhele, 2007; Permanasari et al, 2021); Luna-Krauletz et al, 2021). Phillips (2022) opines that environmental education is in the syllabus but teaching it is a battle.

Mokhele (2007) found that although the schools were expected to begin the integration and implementation of environmental education in their teaching of other subject areas, there were no substantial plans and guidelines on how this would happen in schools, that is, no locally adapted curriculum frameworks, no teaching and learning guidelines, no assessment standards, and no time frames or guides for schools to use in setting up opportunities to learn environmental education for learners. Likewise, Duval and Kanene (2016) also found that in implementing environmental education in schools, there is a lack of support from school management teams. While Shabalala (2019) found that, teachers feel overburdened by the curriculum of environmental education, and no one is enforcing the learning and teaching of environmental education. No one is evaluating the extent to which environmental topics are covered in pedagogy.

Therefore, I believe that the management of environmental education curricula should not be the responsibility of a teacher alone. But, it should be extended to enable the participation of various stakeholders in education because the work that teachers do tends to be shaped by what

the environmental partners offer (Rosenberg et al, 2009). Therefore, the education system has a role in changing a society by involving the communities in promoting environmental awareness. Based on its success in certain areas of education, I would argue that distributed leadership should be used to maximise the participation of various stakeholders in the management of the environmental education curriculum through distributed leadership. This could be done by enabling multiple stakeholders to take responsibility for the implementation and management of curricula in schools and out of school.

Numerous studies, which focused on the role of distributed leadership in education, have been conducted in various parts of the world (Botha, 2014; Goksoy, 2015). Some of these studies have found that distributed leadership has a variety of positive effects on education. For example, distributed leadership can bring about organizational change by fostering the participation of various stakeholders in education, enabling overall school improvement and notable learner success (Harris, 2003; Bolden, 2011). More importantly, even though very little research has been conducted globally regarding the impact of distributed leadership in the management and implementation of the environmental education curriculum, there is some evidence to suggest that distributed leadership has the potential to contribute positively to the implementation of environmental education. For example, in their study conducted in Ontario, Canada, focusing on the characteristics of environmental education leaders in a school context, Fazio and Karrow (2013: 622) found that distributed leadership has the potential “to promote environmental education goals in elementary and secondary schools”. Likewise, in a study involving an Israeli college of teacher education to explore distributive leadership effectiveness in campus life (Avissar et al, 2017). Avissar et al. (2017) found that distributed leadership has the potential to enable the mainstreaming of environmental sustainability into campus life.

Several South African scholars have, mainly since the advent of democracy, explored the role of distributed leadership in education. Even though “distributed leadership in South African schools is in its very early stages” (Sibanda, 2017: 577), scholars do acknowledge the positive role that distributed leadership might have on education (Akdemir & Ayik, 2017; Botha & Triegaardt, 2014). Significantly, in respect of the possible relationship between distributed leadership and environmental education, Jita and Mokhele (2013) opine that the role of teachers in instructional leadership may be decentralized to the schools in some of the subjects such as environmental education. Curriculum management is important for implementing a consistent

framework for teaching across the school districts, where leaders can assess learner and teacher performance against common standards, making it easier to spot issues that may need immediate attention, as well as investigate best practices that may otherwise be hidden (Lister & Cameron, 1986). However, it is my view that none of this is possible unless education districts and schools implement measures effectively to manage the curriculum. This is particularly true regarding environmental education curriculum, which is not given the same attention as other subjects.

As I have indicated in the above paragraphs, distributed leadership is one of the strategies that are effective in bringing about positive change in some regions of education. However, despite this potential, the literature reviewed for this research suggests that in South Africa, as in other parts of the world, there is a paucity of research which focuses on the role of distributed leadership in education, particularly in the implementation of environmental education. Hence, Sibanda (2017: 577) writes, “there is still a need for more research on distributed leadership in primary and secondary schools in South Africa”. This is particularly true in the implementation of environmental education because, as I have argued earlier, the environmental education curriculum does not receive as much attention as the other subjects. Accordingly, this research aims to determine if distributed leadership is used in selected high schools of the UGU District of Education and, if so, to what extent it is used to enable environmental education implementation.

1.2.1 Research Questions:

1.2.1.1 Main research question

What strategies are adopted for distributed leadership to enable efficient environmental education curriculum management in secondary schools in South Africa?

1.2.1.2 Sub- research questions:

1. What is the role of school principals, school management teams (SMTs), teachers and departmental officials in managing the environmental education curriculum?
2. What are the challenges and opportunities of school principals, department officials, teachers, and School Management Teams (SMT) in achieving distributed leadership in the management of environmental education curriculum?

3. What strategies, contribute to successful distributed leadership in schools to manage environmental education curriculum?

1.2.2 Aim and objectives:

This section discusses the aim and objectives of this research as follows.

1.2.2.1 Aim of the research

This research aims to determine which strategies are adopted for distributed leadership and the extent to which these are harnessed to enable efficient environmental education curriculum management in South African secondary schools.

1.2.2.2 Objectives of the research

1. To determine the role of school principals, SMTs, teachers and departmental officials in managing the environmental education curriculum.
2. To identify the challenges and opportunities principals, department officials, teachers and SMTs may have in enabling distributed leadership in the environmental education curriculum.
3. To identify strategies that may contribute to successful distributed leadership in schools to manage environmental education curriculum.

1.3 RESEARCH JUSTIFICATION

The necessity of this research stems from the gap identified in the literature and practice in South African schools. Based on previous studies, the findings highlighted that in selected schools, the environmental education curriculum is seen as solely the responsibility of the teacher in and out of school, and this is because environmental education does not have a well-documented extant knowledge and is seemingly difficult to integrate into professional education programmes for teachers (Shabalala, 2019; Reddy, 2021). In these school, participant-teachers felt overburdened by the environmental education curriculum. Results suggest that individualising environmental responsibility may limit educational possibilities at schools (Aarnio-Linnanvuori, 2019). This research sought to explore the application and practice of distributed leadership in the management of environmental education curriculum.

Accordingly, I would argue that the management of the environmental education curriculum should not be limited to schoolteachers but also be extended to other various stakeholders

through distributed leadership, as it is likely to enable an efficient and effective implementation of environmental education. To this effect, Conde and Sanchez (2010) state that it is the role of education to change societies. How does the education system change a society not involved in environmental affairs? To do this, there is a need to involve various stakeholders through distributed leadership in which all stakeholders are responsible for managing the curriculum in and out of school.

We need to know how distributed leadership is applied and practised so that we get to know how best the curriculum of environmental education can be managed in secondary schools through distributed leadership. This research might benefit school stakeholders through an amendment of the policy document. When the strategies for managing environmental education curriculum are outlined, stakeholders (principals, subject advisors, teachers and SMTs) can be exposed to best practices for managing the curriculum of environmental education as recommended in chapter seven (7). Knowledge might be developed and extended to all stakeholders in and out of the education department.

1.4 RESEARCH SETTING

The province of KZN is one of the nine areas of South Africa. KZN has been known as the home of Zulus. KZN is divided into different regions. It stretches for 800 km across the east coast of South Africa (SA) (Krishnamurthy et al, 2018), and the South Coast of KZN is a region on the southern coast of KwaZulu-Natal, South Africa. Below is the geographical map of KZN (Mlambo & Ezeuduji, 2020).

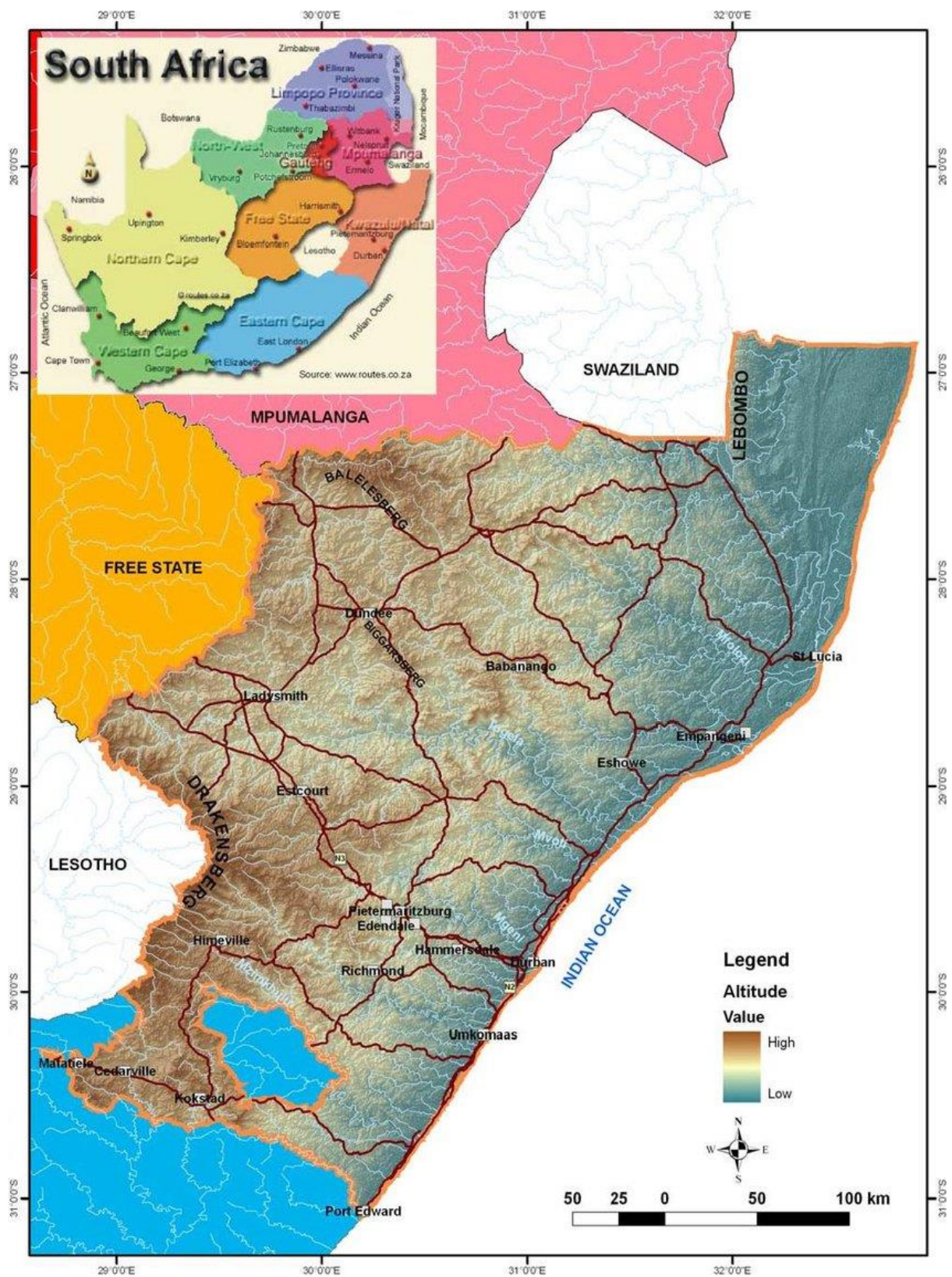


Figure 01: The geographical area of Kwa-Zulu Natal

This research focuses on the South Coast of KZN, which is primarily famous for its beaches and is a place for tourists to indulge, and different resorts have been developed over the years to meet the needs of tourists. The schools in which this research was undertaken are situated in the rural parts of the South Coast. There are areas close to these schools that resemble dumping sites since residents of the villages frequent them to dispose of their uncollected waste. Below is a diagram of the estimated population of KZN.

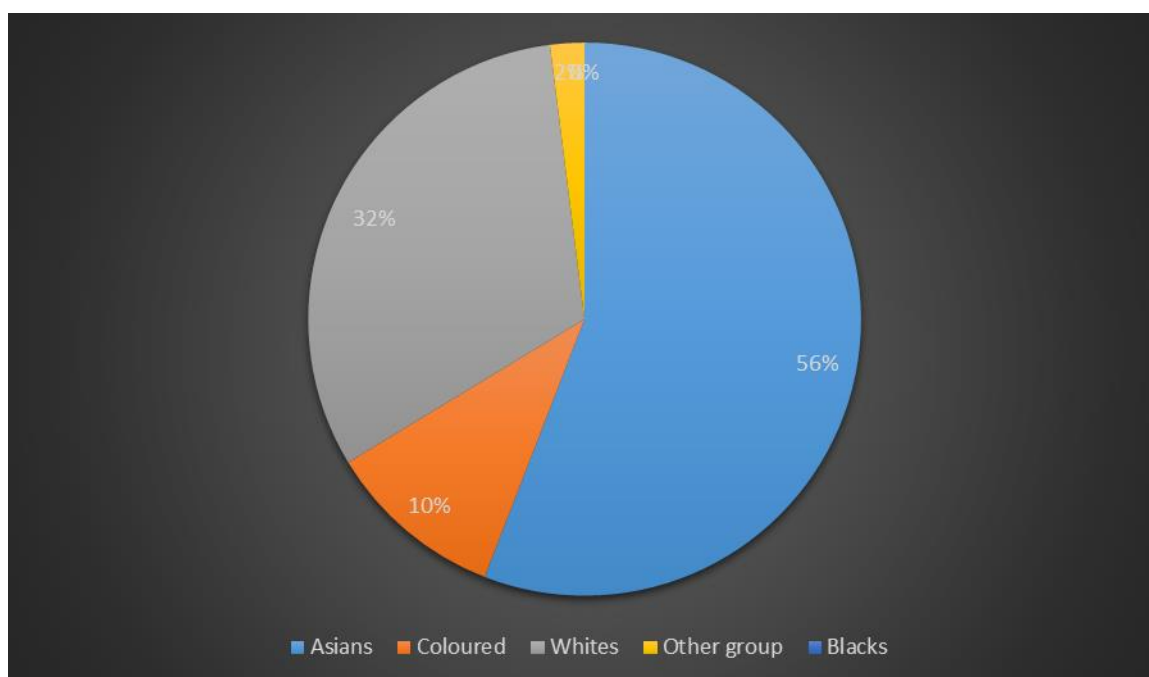


Figure 02: The estimated population of KwaZulu-Natal

The population of KZN was last estimated in 2016 to be 11 065 240, while the area is approximately 94 361 km², and the population density was said to be 117.3/km² (Krishnamurthy et al, 2018).

1.5 INSTRUMENTS OF RESEARCH

A research methodology is the specific procedures or techniques used to identify, select, process, and analyse information about a topic. However, this research has been conducted as follows, and more details are provided in chapter four (4) of the instruments used for this research.

1.5.1 Research Paradigm

A research paradigm is a set of beliefs that direct action in research (Guba, 1990). This research adopted a constructivist research paradigm because the researcher's purpose in making every effort is to ensure that the point of view of the subject observed is understood separately from the point of view of the observer (Sobh & Perry, 2006).

1.5.2 Research Approach

A research approach is a plan of action that directs research systematically and efficiently (Mohajan, 2017, Leedy & Ormord, 2013). This research employed the use of qualitative research because qualitative research approach focuses on events that occur in the natural environments in the real-world (Leedy & Ormord, 2013).

1.5.3 Research Design

McMillan & Schumacher (2010) state that a research design defines how the research is conducted and explains where, when, and on what conditions the data is collected. This research followed a descriptive case study research design (Yin, 2014) because the case study research design allows for detailed analysis into recent developments regarding a real-life phenomenon.

1.5.4 Population and Sampling

In qualitative research, the population is described as the group of people or an organisation/s that the investigation is focused on (Strydom & Venter, 2002). While sampling entails the process of choosing a part of the population to represent for reasons to determine the characteristics of the whole population (Gentles et al., 2015). In this research, the sample was drawn from the following populations of SMTs, teachers and subject advisors who were purposively sampled (Fleetwood, 2020; Robinson, 2014). In chapter four (4), I elaborate more on the population and sampling for this research.

The population that had the potential of contributing to this study are school stakeholders (SMTs, teachers and subject advisors).

1.5.5 Data collection and analysis methods

Data collection methods are all the methods used in data collection from participants (Peersman, 2014). This research used individual interviews (Check and Schutt, 2012). Another data collection method was document analysis. Lastly, this research used observations to collect data on physical and human settings (Ajayi, 2017). More details are provided in Chapter four (4).

1.6 QUALITY ASSURANCE

According to (Hammersley & Traianou, 2012), the trustworthiness of qualitative findings includes methods and data triangulating, which involves using different data collection methods to collect data from other data sources and using member checking when gathering and writing up data obtained from participants. In the current research, I recorded all interviews conducted and then arranged information to be verified by every person participating after an interview through a follow-up visitation after the data collection process. All interview data was transcribed to make sure that all information provided is correctly presented.

In the promotion of trustworthiness, all information and responses were audio-recorded after getting permission from participants. Probing questions are essential to elicit open responses that give clear information about the subject matter. In other studies, certain features present trustworthiness of qualitative results (Anney, 2014; Elo et al, 2014). For quality assurance, I used various scholarly acceptable ways to ensure rigour and trustworthiness, and these include credibility, transferability, dependability, confirmability, and triangulation, and in chapter four (4), I have provided more details on how quality was assured.

1.7 RESEARCH ETHICS

In conducting this research, I adhered to requisite ethical considerations as per the norm of qualitative research. These include anonymity, permission to conduct the study, informed consent from participants, confidentiality, beneficence and non-maleficence, autonomy, and dignity; and in chapter four (4), I provided more details (Barrow & Khandbar, 2019; Anney, 2014; Zukauskas et al, 2018). The techniques I planned to follow are as follows:

1.7.1 Permission to conduct the study

I applied for the Ethical Clearance Certificate (Ref: 2021/02/10/49634062/31/AM) from the College of Education (CEDU) Committee (REC) at the University of South Africa (UNISA) to get permission to conduct the research because it is important to acquire authorisation from the people in charge. I wrote letters to the gatekeepers at the Department of Basic Education (DBE) district and schools where data will be collected.

1.7.2 Informed consent from participants

I informed participants that their participation is voluntary. I then issued participants with informed consent forms to sign after reading them the requirements. As a researcher, I explained all procedures to the potential participants.

1.7.3 Anonymity and confidentiality

One of the fundamental principles of social science research is that researchers must obtain consent from the respondent if they disclose their identities and participation in a study (Kaiser, 2009). To ensure the anonymity and confidentiality of respondents, I ensured that I do not ask participants for their real names and they are not mentioned while presenting, analysing, and interpreting data. Personal particulars of all participants were not shared during the study, and pseudonyms and codes were used where necessary to maintain confidentiality (Kaiser, 2009).

1.7.4 Balancing principles of beneficence and non-maleficence

In studies involving human participants, researchers are expected to, as far as possible, ensure that no harm befalls the respondents and that they derive some benefit from the study (Kruger et al, 2014; The National Research Council Committee, 2004). I needed to point out that the word 'benefit' as used in this context does not refer to the benefit of getting something as an incentive. Still, it may refer to benefiting society through ensuring the provision of correct data (Resnik, 2018). Therefore, in this research, I assured the participant that no harm could befall them due to their participation in this research and that this research would benefit them in the sense of empowerment, as well as increase in knowledge that might come about as a result of the study. During the research process, I ensured that the participants are not exposed to any harm during data collection and presentation (Avasthi et al 2013; Townsend et al, 2010).

1.7.5 Autonomy and dignity of participants

Researchers should respect participants' and potential participants' knowledge, insight, experience, and expertise (Barrow & Khandbar, 2019). In this study, I respected individual, cultural and role differences. I have also avoided any unfair, prejudiced, or discriminatory practices.

1.8 DEFINITION OF KEY CONCEPTS

In this section, I have discussed the key concepts used in this research. I have used the following concepts to build up the literature of this research.

1.8.1 Curriculum

A curriculum is the offering of socially valued knowledge, skills and attitudes made available to learners through a variety of arrangements during the time they are at school (Adu & Ngibe, 2014). A curriculum is a structured form of useful materials for teaching and learning and a set of topics that must be learned. The term curriculum in this research refers the knowledge and abilities that learners are expected to master as they advance through the educational system.

1.8.2 Curriculum Development

Curriculum development describes all how a training or a teaching organization plans and guides learning. Alvior (2014) states that curriculum development is defined as a planned, purposeful, progressive, and systematic process to create positive improvements in the educational system. In the context of this research, curriculum development was used to refer to the content development of the subjects (the materials, policies etc.).

1.8.3 Subject Advisors

Subject advisors are responsible for providing guidance and mentorship to in-service teachers within their fields of specialisation (Chigona, 2017). In this research, the concept of subject advisors was used to refer to the department officials that are part of the school.

1.8.4 Curriculum Management

Curriculum management is the assurance of learning, it is concerned with learning and teaching, and it is concerned about curriculum deliverance, how it is delivered and for what

reasons (Changiz et al, 2019; El Nahass, 2019). This term is used in this research to shed light on how the curriculum should be managed in schools.

1.8.5 Environmental Education

Environmental education is explained as a useful tool for environmental learning and teaching. The role of environmental education is to educate individuals about their environment to raise environmental specialists and ambassadors and create strategies to overcome the growing environmental crises that are facing the planet (Abboud, 2021; Luna-Krauletz et al., 2021; Shutaleva et al., 2020; Erkal & Gursoy, 2013). Environmental education is used to explain what learning and teaching about the environment entails and the importance of learning about, for and in the environment to prevent the overspread of environmental issues.

1.8.6 Leadership

Leadership is the action of leading and “influencing a group of people to accomplish an objective and directs an organization in a way that makes it more cohesive and coherent” (Sharma & Jain, 2013, 310). Leadership is both a research area and a practical skill encompassing the ability of an individual or organization to lead. Moorosi and Bantwini (2016) state that leadership is a crucial tool to ensure great returns on investments. This term is used to explain what leadership is and provide a link to distributed leadership.

1.8.7 Distributed Leadership

Distributed leadership is collective work as well as collective learning by working on goals through communication and interaction (Goksoy, 2016). Distributed leadership shifts away from individual work but is a joint leadership. Distributed leadership focuses on the engagement of expertise wherever it exists within the organisation, rather than seeking this only through formal position or role (Harris & Jones, 2018). In this research, this term is used to emphasise the importance of distributing roles for the management of environmental education curriculum.

1.8.8 Transformational Leadership

Transformational leadership is a process in which leaders and followers raise one another to higher levels of morality and motivation (Burns, 1978). Transformational leadership motivates

employees to overcome their own interests and strive for the collective goals (Jiang et al, 2017). This research constituted this term to show the connection between distributed leadership and transformation.

1.8.9 School Management Team (SMT)

The school management team (SMT) is made up the principal, deputy principal and heads of departments (Khumalo, 2014). The SMT is a team of school management that ensures the running of the school. The SMT term is used to explain the body of management in the schools. In this research, I sometimes use the acronym SMT in reference to all members of the school management team, i.e., the school principal, the deputy principal and HODs while in some instances I use the acronym without including the principal but just in reference to deputy principals and HODs. This is a common practice in South African public schools, as the principal is sometimes viewed as a superior who overrules everyone and every decision.

1.8.10 Curriculum and Assessment Policy Statement (CAPS)

The Curriculum and Assessment Policy Statement (CAPS) is a single, comprehensive, and concise policy document introduced by the Department of Basic Education for each school subject listed in the National Curriculum Statement for Grade R- 12 (DBE, 2012). The CAPS document was introduced in the year 2011 and implemented in 2012, and the implementation of each subject is guided by a detailed policy document. In this research, this term is used as a document that guides the teachers in their learning and teaching.

1.9 CHAPTER OUTLINE

This research is presented in five interrelated chapters.

Chapter 1: This chapter provides an introduction and background to the research.

Chapter 2: This chapter presents the theoretical framework which underpins the research.

Chapter 3: This chapter discusses and provides a detailed literature review on distributed leadership and the management of environmental education curriculum in schools.

Chapter 4: This chapter presents the methodology and design of the research.

Chapter 5: The fifth chapter deals with the presentation of results.

Chapter 6: This chapter discusses the findings of the research.

Chapter 7: This chapter summarises the results and discuss their implications. Furthermore, it explores the meaning of the results and draws conclusions from the data analysis. This chapter will also present some recommendations and possible future research questions. This chapter will also give some suggestions and potential future research questions.

1.10 SUMMARY

This chapter discussed the background and significance of this research. The research questions, aim, objectives and context are discussed in this chapter to give a clear background to support the importance of this research. This chapter drew significance from the existing literature and discussed how this research might close the gap. This chapter also discussed the views of other scholars to support why this study was undertaken.

2. THE THEORETICAL BACKGROUND UNDERPINNING THIS RESEARCH

“The end of education is character.”

Sathya Sai Baba¹

2.1 INTRODUCTION

The previous chapter presented the contextualization of the study by outlining the general background to the research, research problem, aim of the research, and research questions. Sathya’s quotation, above, emphasizes that education should produce developed character. Sathya’s quotation is relevant to this chapter as this chapter focuses on the different leadership theories on the outcome of education, collaboration amongst stakeholders and change of behaviour towards environmental education (Baba, n.d.). Furthermore, this chapter focuses more on the transformation as an important role player in an institution and learning from your peers or leaders to develop character. In this chapter, various literature sources have been consulted and reviewed to explore the theories that underpin this research. Accordingly, this chapter presents the theoretical framework of this research.

2.2 THEORETICAL FRAMEWORK

The concept of theoretical framework is composed of two distinct terms namely, theory and framework. Mawela (2016) states that, a theory can be described as an idea that has developed in the mind of a researcher. In the same vein, Thomas (2017) states that when the term theory is mentioned it may imply that a researcher is establishing relationships between two or more variables. Furthermore, Kivunja (2018:45) states that a theory comprises of “ideas, concepts, and themes that constitutes a deep and broad base of knowledge in the discipline”. Abend (2008) defines a theory as an explanation of a particular social phenomenon. In the preceding years, Wacker (1998) defined a theory as a statement of relationships between units observed or approximated in the empirical world. In this research, a theory is defined as a system of ideas that aim to explain the phenomenon and the ideas that organized and guided the research. Researchers use theories to explain the processes and relationships that exist in a social context chosen for the research.

Rouse (2015) defines the framework as a conceptual or real structure that intends to serve as a guide or support in constructing a structure and expand it to be useful. Imenda (2014) states that a framework is characterized by a structured format that guides a researcher to fine-tune research questions, select data collection methods and plan how to analyse data. Once data is collected and analysed, the framework is used as a mirror to check whether the findings agree to the framework or whether there are some discrepancies, where discrepancies exist, a question is asked as to whether the framework can be used to explain them (Imenda, 2014). However, my view is that a framework is a supporting structure to help strengthen the arguments of a researcher to reach the full capacity of the research findings.

Adom et al (2018) and Mawela (2016) state that a theoretical framework is a guide that reflects the aim of the research. This is corroborated by Grant and Osanloo (2014) who state that a theoretical framework involves theoretical concepts, constructs, and principles. Brondizio et al (2014) concur that a theoretical framework is a process of adopting theories or a specific theory that can be useful in studying human behaviour through events that take place. To summarize the concept of a theoretical framework, I view a theoretical framework as a structured guide on how to study different variables in the same or different contexts. In support of my view, therefore, the theoretical framework that was selected for this research underpinned the knowledge base of a phenomenon to be investigated by a researcher (Lederman & Lederman, 2015). Accordingly, this research is grounded on three theories, namely, transformational leadership theory, distributed leadership theory, and social constructivism theory; these theories will be discussed in detail later in the chapter. The theoretical framework underpinning this research enabled this researcher to explore the management of environmental education curriculum through distributed leadership in selected secondary schools. The following is the discussion of the three theories.

2.2.1 Transformational Leadership Theory

The transformational leadership theory pertains to the interaction between various persons. According to this theory, a solid relationship is developed, and trust can be built, which accelerates the extent of motivation, both intrinsic and extrinsic, in leaders and followers (Odumera & Ifeanyi, 2013; Bandura, 1978). One of the major assumptions on which this leadership theory is centred, is that leaders transform their followers through the leader's personalities and through inspiring their followers (Nikezic, Puric & Puric, 2012). Regulations

and rules in this environment are flexible. Transformational leaders are guided by the group norms, and the group norm attributes provide a sense of belonging for the followers as they can easily identify with their leaders and purpose (Mahdinezhad et al, 2013; Bass, 1985). In the context of this research, the interaction is between school principals, SMTs (deputy principals & Head of departments), subject advisors and teachers. In order for them to manage the school environmental education curriculum, they need to build solid relationships and trust for the beneficial of the institution. It is the responsibility of a school principal and subject advisors to transform and inspire their followers (SMTs, SGBs, and teachers). Stakeholders are easily engaged when the leadership environment is flexible.

2.2.1.1 The origins and significance of transformational leadership theory

The transformational leadership theory can be traced back to the work of Weber (1947) where he discussed charismatic leadership, the heroes that transformed and changed the world until they were ousted or succeeded by bureaucratic or traditional authority (Boje, 2000). Over the years, some theorists such as Downton (1973) have expanded the theory. Downton (1973) first discussed the concept of transformational leadership and later Burns (1978) introduced this theory as a concept in his book on leadership known as *Leadership*. Literature suggests that Burns (1978) studied Weber (1947) reasoned that transactional leaders were like bureaucrats, and charismatic heroic leaders were transformation leaders (Boje, 2000). Again, in 1985, Bass explained the psychological measures of transformational leadership theory.

Literature suggests that the significance of transformational leadership in an organization has led to the conceptualization of the transformational leadership theory in the educational context (Leithwood, 1994). Jovanovic and Ciric (2016) opine that transformational leadership has a significant effect at school level, in that it enables, among other things, school restructuring and development teacher-perceived learning objectives. Additionally, Anderson (2017) states that transformational leadership is best suited for coping with the demands of the schools. Many scholars have found that the application of transformational leadership enabled them to consistently predict the willingness of teachers to devote extra effort and change their teaching practices or attitudes (Anderson, 2017; Jovanovic & Ciric, 2016; Leithwood, 1994). The success of transformational leadership on teacher commitment is well documented in literature. In agreement with Anderson (2017); Jovanovic and Ciric (2016) and Leithwood (1994), my

understanding is that transformational leaders transform how teachers view the organization and work as a motivating mechanism to work towards organizational goals.

The most consistent findings associate transformational leadership with organizational learning, organizational effectiveness, and organizational culture (Anderson, 2017; Jovanovic & Ciric, 2016; Leithwood, 1994). In addition, attention is drawn to the necessity to change the school and classroom conditions to improve learning (Jovanovic & Ciric, 2016). Transformational school leaders, this includes both teachers and school principals, focus on the restructuring of schools or classrooms and improving conditions in the school, this is through the provision of a conducive environment for effective teaching and learning (Money, 2017; Jovanovic & Ciric, 2016). Transformational leadership is significant in school as it can improve schools, change teachers' classroom practices, enhance the quality of teaching, student learning and achievement, and student engagement as learning outcomes (Jovanovic & Ciric, 2016; Tengi et al, 2017). In my view, transformation is a product of organization plan where the staff is working together with the principal to ensure that teaching and learning takes place in schools and give the kind of encouragement that promotes quality education.

The selection of transformational leadership as one of the theories guiding this study emanates from the realisation that transformational leadership can help improve the management of environmental education curriculum in schools. This is possible to realize because all stakeholders who have a direct role in the integration of environmental education in pedagogy might be transformed through distributing roles among stakeholders. None of the stakeholders may feel overburdened with work or less involved in the decision making regarding the management of environmental education curriculum in the school if transformational leadership is adopted.

2.2.1.2 The essence of transformational leadership theory

According to Burns (1978), transformational leadership is a process between leaders and followers where they help one another to reach higher levels of motivation and morale. Adding on the view of Burns (1978), Gomes (2014) states that transformational leadership is a process in which the influence of the institutional leader on the followers' beliefs, attitudes and values are so profound that it eases the internalization of the leader's vision and goals, culminating in the achievement of the followers' organizational performance beyond expectations. Through

this process, the leaders, and followers' levels of morality and motivation are raised (Gomes, 2014). In support of the views of Burns (1978) and Gomes (2014), I regard transformational leaders as all the stakeholders involved in schools, therefore, the best strategies of environmental education curriculum management can be achieved when all stakeholder's values are transformed to suit the goals of the institution.

Bass (1985) notes that through transformational leadership, valuable and positive change on followers is created to grow from being a follower to a leader. In corroboration with Bass (1985), transformational leadership enhances performance, motivation, and the morale of followers. Supporting Bass, Jovanovic and Ciric (1978) state that transformational leadership is associated with a change in the culture of the organization in that it improves the effectiveness and efficiency of the organization. Transformational leaders idealizes that they need to set an example when working towards an organization, community and a team needs to benefit (Burns, 1978). In my view, teachers can be transformed from being followers to leaders if they might be involved in decision making on how environmental education curriculum is managed in schools, rather than just passive teachers who are only assigned to implement the curriculum.

I am of the view that, to be transformed, the beliefs of individuals involved in the transformational leadership process must be in line with the goals and values of the organization. My assertions are in line with the views advanced by Gomes (2014) who argues that transformational leadership connects the followers to their sense of identity, collective identity of the organization, the identity of the self to the mission and, challenges them to take great ownership of their work, present themselves as role models to their colleagues and understand their strengths and weaknesses. Leaders can then align and channel their followers with tasks that seek to advance their performance (Burns, 1978). According to Bass (1985), transformational leadership is measurable, and the same author further explains how this leadership influences the followers' motivation and performance. Transformational leadership can be measured through the influence that a leader exerts on their followers (Turner, 2020; Bass, 1985). Similarly, through this approach to leadership, respect, trust, loyalty, and admiration are developed amongst leaders and their followers (Cherry, 2020). Therefore, in my view, the participants in positions of leadership such as SMTs, should first embrace and embody the goals and values of their organizations if they expect their followers to do the same.

Because of the leader's qualities, the followers willingly work harder and exceed institutional expectations as laid down by organization leaders than expected by the institution (Towler, 2019; Burns, 1978). Therefore, enhanced organizational performance is an outcome of working with a transformational leader because these leaders provide their followers with what is more than self-gain, identity, recognition, inspiring vision, and mission (Burns, 1978). Followers are transformed and motivated through an idealized influence, intellectual stimulation, and individual consideration of their leaders (Bass, 1985). Transformational leaders encourage and motivate their followers to produce innovative ideas and different strategies to solve challenges and to successfully contribute towards the transformation of the institution (Gomes, 2014). It is my view that, transformational leadership has an important role to play in schools to encourage and motivate school stakeholders to share innovative ideas that may help to solve challenges that may arise in the institution. Bass (1985) states that the transformational leadership theory is guided by four elements depicted in the following diagram:

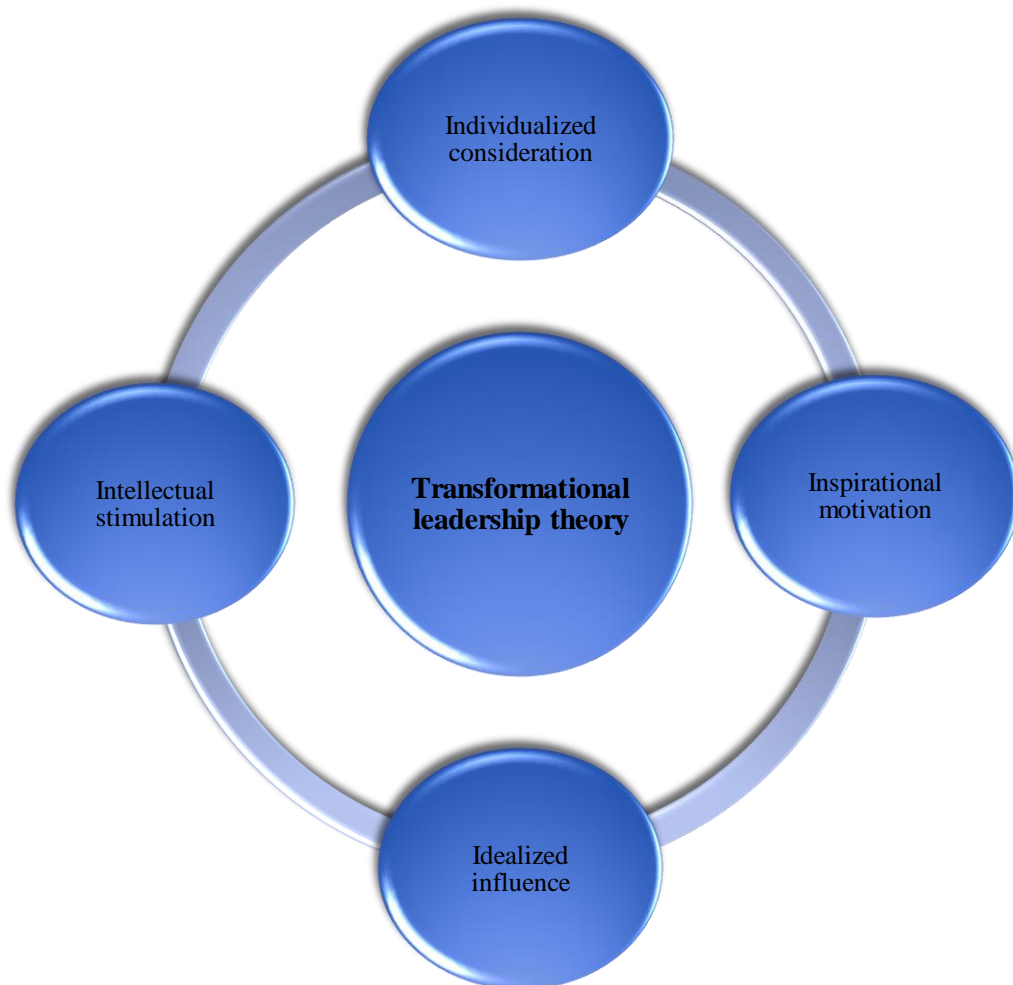


Figure 0.1: Elements of Transformational Leadership Theory (Bass, 1985; Tefera, 2018; Reza, 2019)

The four elements of transformational leadership theory are described by (Reza, 2019; Tefera, 2018; Bass, 1985) as follows.

1. Individualized consideration: is described as a level in which a leader acts as a mentor and how a leader listens and attends to the follower's individualized needs and concerns. The leader empathizes, keeps open communication, brings challenges before the followers, and supports the followers (in the process of addressing those challenges). This encompasses the need for respect and celebrates the individual contribution that each follower can make to the team. The followers have the will and aspiration for self-development and have intrinsic motivation for their assignments. In this research, this level is about those in leadership positions who can support teachers, track curriculum coverage and offer teachers necessary support.

2. Intellectual stimulation: this is the level to which the leader challenges assumptions, solicits followers' ideas, and takes risks. The followers' creativity is encouraged and stimulated by a leader who follows/applies this leadership style. Through this style of leadership, people who think independently are developed and nurtured. Unexpected situations are treated as opportunities to learn, and learning is a value for such leaders. Followers have an opportunity to think deeply about certain aspects, ask questions, and produce better ways to master their tasks. In my view, the leaders should challenge teachers to be creative through the management of environmental education curriculum and they need to master this skill by taking this as an opportunity to learn new approaches to implement environmental education.

3. Inspirational motivation: at this level, a leader articulates the vision that is inspiring and appealing to his/her followers. An inspirational motivation leader challenges follower to communicate, develop high standards, and give meaning to the tasks given to them by these leaders. Additionally, a strong sense of purpose is developed by followers when transformational leaders with inspiration motivate followers to act. The energy to drive the group forward is provided through purpose and meaning. Communication skills support the visionary aspects of leadership that make the vision, precise, understandable, engaging, and powerful. The followers are encouraged, more willing to invest their efforts, believe in their abilities, and are more optimistic about the future. For me, this means that this stage would be characterized by encouraging communication amongst principals, SMTs, SGBs, Subject advisors and teachers in suggesting strategies that may be effective to manage environmental education curriculum in secondary schools. This level may also challenge school leaders and followers to invest their effortless potential in the institution.

4. Idealized influence: at this level, transformational leaders can exert their influence on their followers. The leaders gain respect from their team members because they set a good example before them. These leaders provide a sense of belonging, they give a clear vision that encourages their followers to believe in the organization's long-term objectives, and they are pushed to achieve their individual goals. Therefore, these leaders are role models before their followers as the followers imitate them. Because of their leaders who model transformational leadership, these followers are motivated to develop a desire to lead. I agree with the view of Bass (1985) because in my view those in the position of leadership can influence the SMTs, SGBs and teachers to work together to manage environmental education curriculum and

achieve the end goal of the schools. It is my perspective that, if principals and subject advisors can model transformative leadership to SMTs, SGBs and teachers, they could be motivated to implement effective strategies to manage environmental education curriculum in secondary schools.

According to Weber (1947), the authority and legitimacy of a leader is proven through their followers' perspectives. While Shah and Al-Bargi (2013) states that this kind of leadership induces followers to act toward certain goals that represent the values and the motivations, inspirations, and expectations of a leader and followers. This theory characterizes the differences between leaders and followers in motivation, skill, and power (Burns, 1979). Towler (2019) asserts that leaders and their followers strive and engage for the same goal and values. Transformational leadership occurs when one or more people engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality (Kolzow, 2014). In my view, it is more beneficial for the organization when leaders and followers share the same goals and values and have the best interest of the organization at heart.

2.2.1.3 The shortcomings of transformational leadership theory

Even though this theory has several 'positive effects', there are numerous limitations associated with this theory. For example, this theory does not explain the processes followed by transformational leaders; instead, it focuses only on transformational leadership performance effects (Bass, 1998). Therefore, it is still unclear what transformation processes are produced by leaders in certain situations (Bass, 1998). Additionally, being a transformational leader involves exercising many different roles (Beck-Tauber, 2013). These roles include mentor, delegator, communicator, enhancer, developer, facilitator, influencer, stimulator, role model, instiller, inspirer, provider, promoter, questioner, and monitor (Bass & Avolio, 1994). Accordingly, in my view, due to the vast number of roles played by the transformational leader, it would be difficult to accurately pinpoint all the transformation processes implemented by the leader to enable organizational transformation.

Also, transformational leaders are criticized because they are represented as great giants who can transform everyone and everything in the organization (Northouse, 2013; Tourish & Pinnington, 2002; Yukl, 1999). The writing of Bass (1985) highlights that there is a strong bias

in transformational leadership. Lee (2014) states that Bass (1985) describes transformational leadership as a perfect, flawless, and an ideal form of leadership. I perceive this to be untrue because any leadership has shortcomings. To transform an individual means that you will need to adopt different approaches or rather even opt for a different leadership style to engage with them. The other shortcomings of transformational leadership are that this type of leadership is too imaginary, and employees miss the task focus as to how to carry their duties (Thompson, 2019). Transformational leaders do not like to be entangled with details, but every organization needs operational planning to help it achieve its vision (Thompson, 2019). In this regard, I argue that while some followers are inspired, some feel pressurized by the presence of the transformational leader.

Transformational leaders emphasize originality, authenticity living, and respecting the values and culture of the organization (Staff, 2019; Thompson, 2019). For this reason, some employees can experience burnout and become demotivated by the constant push by transformational leaders to achieve, to take pride in the organization's achievements and grand vision as they may find the roles and responsibilities given by the leaders too demanding (Staff, 2019). In support of the argument presented by Staff (2019), I concur that the message conveyed by his argument is that a transformed mindset is required which is more than just showing up, complete your tasks, and then go back home.

The purpose of hiring transformational leaders for organizations is to fulfil organizational goals and to create change within the organization (Thompson, 2019). When change happens frequently, it becomes disruptive, and it can become damaging when leaders take unnecessary and extreme risks (Futcher, 2019). Additionally, danger spirals when change is recognized by the transformational leader as the end game, instead of something positive for the organization (Thompson, 2019). It is therefore my view that if the leader fails to objectively assess whether this change is the appropriate response, it is more likely to produce negative outcomes.

Thompson (2019) and Futcher (2019) believe that transformational leaders have the potential of being abusive because what these leaders perceive as the right way of doing things within the organization might be a wrong way as perceived by the followers. Responding to the critics of transformational leadership, Bass (1999) differentiates between pseudo-transformational leadership and transformational leadership. The often-debated problem in the leadership

literature is the Hitler problem as Hitler argued as a transformational leader who negatively utilized his emotional appeal (Bass, 1999). To distinguish, transformational leaders are believed to be ethical, and unethical leaders are viewed as pseudo-transformational (Bass, 1999). Bass (1999) insists that pseudo-transformational leaders are different from transformational leaders because moral development is an essential characteristic of a truly transformational leader. To address the gaps that have been identified in transformational leadership, continuous research is a prerequisite for researchers. I agree with Bass (1999) when he states that pseudo-transformational leaders are different from transformational leaders. To me this means that the term pseudo-transformational leaders is just a fancy term used to describe something which is apart from the actual meaning of transformation. Because to me change is not transformation, as change is an immediate enthusiasm to approach situations differently that can die off after a while, while transformation is a permanent influence to deal with or approach situations differently.

To be successful, transformational leaders rely on keeping enthusiasm levels high, and that takes a lot of work and a lot of meetings and feedback, week in week out (Thompson, 2019). If by any chance there is a communication breakdown, some followers might feel left out, and, therefore, there might be a risk of losing commitment and focus to the vision of the organization. In my view, in the school context, this negative possibility could be mitigated by school leaders by ensuring that teachers are not expected to fulfil too many responsibilities as a transformative process, but rather motivate and encourage them to teach and manage environmental education curriculum in their full abilities.

Transformational leaders can influence their followers to apply exceptional and extra efforts to achieve a common goal (Bass, 1999; Burns, 1978; Howell & Avolio, 1993). Therefore, the influence flows from the leaders down to the followers (Yukl, 1999). The danger of such unidirectional influence is that it “makes the followers more susceptible to deception” (Mullins, 2007: 383). This heroic leadership bias may naturally have detrimental consequences such as blind trust from followers (Shamir, 1995) and autocratic behaviour by leaders (Northouse, 2013). Transformational leadership is dependent on the intrinsic motivation of employees to work hard, this motivation may lack if employees are not feeling, connecting, and hearing the vision (Thompson, 2019). Therefore, I concur with Thompson (2019) that the insufficiency of transactional motivators such as punishments and rewards may contribute to discouragement

and failure of transformational initiatives. In my view, having leaders who are autocratic in their sense of leadership may result in a disruptive curriculum management because there may be communication breakdown and curriculum implementers may not be willing to be transformed or work together to fulfil the goals of the institution.

Despite the highlighted shortcomings, I still believe that transformational leadership is a considerable leadership. The goal of transformational leadership is not just to have things done, but also to bring permanent change in the organization. Transformational leaders adopt approaches that make their followers trust their leadership practices, add accomplishments and significant levels of fearlessness and esteem which, causes followers to admire and respect their leaders (Daft & Marcic, 2006). The leader also enlarges the necessities of the followers and offer them support to accomplish higher achievements (Antonakis et al, 2004). Therefore, in the following section the successful applicability of transformational leadership theory in the school context is discussed.

2.2.1.4 The applicability of transformational leadership theory in the school context

According to Tengi et al (2017: 92), “transformational leadership in schools has increased the effectiveness of the organization and the academics of learners”. Leadership in education has become the focal point in an era of school accountability and school restructuring (Tengi et al, 2017). In a study conducted by Abdullah (2005) with the view to identify the relationship between principals and transformational leadership style in Malaysian schools, the author discovered that through the application of transformational leadership, the teacher’s responsibilities in a school are affected by the school leaders (Abdullah, 2005). The study by Tengi et al (2017) found that transformational leadership contributes to the teachers’ motivation, and this has a positive impact on learning and teaching in that it culminates in an improvement in the learner’s academic performance. In my view, a transformed teacher easily reciprocates transformation to their learners because transformation starts from an individual and becomes extended to a group. Therefore, a teacher who is motivated can positively impact the way their learners experience the process of teaching and learning.

Moonlenaar et al (2010) state that transformational leadership is associated with an innovative school climate that promotes teacher engagement. In addition, Tengi et al (2017) argue that transformational leadership motivates followers to do more than they are expected to do by

their leaders in that they enhance their productivity and effort. According to Tengi et al (2017), in their quest to achieve success or enhance school performance, the principals who apply the transformational leadership approach have the power to convince their staff to cooperate with them. The principals are core managers and leaders in schools, and they are responsible for effecting change in schools (Fullan, 2007). My view is that as a manager at the school, the principal is the most important person that can affect the success of the school. Successful school leaders tend to be able to influence followers to achieve the vision and mission that has been set (Tengi et al, 2017).

Several studies indicate that, in a school context, transformational leadership has been successful in transforming the behaviour of principals, teachers, and other school staff (Cisneros, 2016; Anderson, 2017) and that transformational leadership has a positive effect on improving teacher performance (Andriani et al, 2018). Therefore, I argue that the school environments where transformational leadership exists are conducive to teaching and learning as the school staff has learned to work together instead of working against each other. This can be attributed to the transformational leader setting the atmosphere to establish various norms for the behaviour that staff members follow (Allen et al, 2015).

Through transformational leadership, principals support and motivate their staff to contribute to decision making and active participation in the affairs of the school, hence the style of the principal's leadership has a big role in influencing teacher performance (Andriani et al, 2018). I concur with Andriani et al (2018), because I believe that transformational leadership should encourage teachers not only to be followers but to lead as well. Okinyi et al (2015) state that transformational leaders stimulate and inspire followers to achieve extraordinary outcomes, and in the process develop their leadership capacity. In the context of this research, my view is that the application of transformational leadership can be done through the management of environmental education curriculum where teachers are encouraged to become leaders due to the support, they get from the school leaders who groom them for leadership.

2.2.1.5 Transformational leadership theory in the context of environmental education

From my standpoint, environmental education is intended to be transformative and can serve as an important catalyst for social transformation and reconstruction. Presently in South Africa, transformation, redress, equity, and participation are of major importance and environmental

education can be an important facilitating vehicle in achieving these aims (Le Grange & Reddy, 1997). In the context of this research, my view is that as a theory that deals with transforming the beliefs and values of the followers by a leader, this transformation may affect the followers negatively or positively. For example, if the leader is negligent, the followers might adopt the same traits and may be motivated indirectly to be negligent. Likewise, if the leader is diligent, the followers might be inspired to be diligent too. Also, the influence of the transformational leader on his/her followers plays a huge role in shaping the beliefs, culture, and values of the organization. In my view, this suggest that, having negligent school leaders may result in some teachers adopting the similar behavioural traits as the leaders.

The activities of transformational leadership are categorized as power, discretionary decision making, goal emphasis, coordination, organization, and human relations (Flath, 1989). My perspective is that in the case of environmental education teaching and learning, transformational leadership is imperative, as the management of environmental education curriculum can help to minimize teacher's confusion. The leader is sensitive to working with teachers, and members of the public (Baskett & Miklos, 1992). In my opinion, the school principals who apply transformational leadership are likely to support teachers in the implementation of environmental education. This is because the school principals who use transformational leadership strategy have the capacity to arrange meetings with teachers, discuss and identify gaps in the teaching and learning of environmental education in schools (King, 2002).

Okoth (2018) mentioned that creating a forum for administrators and teachers could help to close transformational leadership gaps that have been identified and move forward (Okoth, 2018). Outside experts can be invited by principals to provide an overview of the research on the teaching and learning of environmental education so that they help contextualize the situation in their school within a larger framework (Okoth, 2018). As far as I am concerned, this would present an opportunity for teachers to come to terms with the challenges of environmental education and find better ways to deal with the kind of challenges. My assertions are in line with the views advanced by Okoth (2018) who stated that that organizing peer visits and data gathering is the kind of support that principals can offer to teachers for them to focus more intently on their work. In this way, teachers develop a database for benchmarking the

current environmental education situation and to assess progress of environmental education implementation or lack thereof (Okoth, 2018).

In my opinion, through the teaching of environmental education in schools, principals as transformational leaders can bring change in skills, knowledge, and attitudes of teachers and learners for the protection of the environment. The teachers and learners are likely to view environmental issues differently, causing them to feel some level of obligation to take care of their environment, for instance, picking and putting litter in the right place (Okoth, 2018). On the same note, transformational principals can impact the degree of environmental education implementation by assuming an immediate dynamic role than leaving the process of environmental education implementation to singular teachers (Fullan, 1991).

Ross and Gray (2006) found that transformational leadership behaviour is positively correlated to high academic performance in schools. Arguably, although principals might not be specialists in environmental education, they furnish leadership by acclimatising themselves with the general idea of the subject and through working with staff. Transformational leadership encourages the teacher's commitment to the school vision, collaboration, teamwork, professional community, and school norms of collegiality. This implies that such leaders tend to inspire teachers to think beyond their interests and focus on organizational and national objectives. It is my view that when teachers are inspired, they can implement the same positive behaviour in the environmental education context.

In this research, I perceive secondary schools as organizations in which the teaching and learning process take place. In these organizations, principals, SMTs, subject advisors and teachers practise management skills that are transformative for all staff. Also, these organizations are a great platform for principals, SMTs, subject advisors and teachers to work together towards one goal to expand and improve the organization towards effective implementation of environmental education by using transformational leadership. Therefore, I concur that, when achieved, transformational leadership might help schools to improve the management of environmental education curriculum as teachers' attitudes may be transformed to have full support of the whole team that contributes towards creating an environmentally literate community.

Based on the preceding assertions, it should be evident that transformational leadership is a theory of leadership where a leader works with teams to identify needed change, creating a vision to guide the change through inspiration, and executing the change together with committed members of the group. Likewise, working together of the principal, SMTs, subject advisors and teachers in decision making processes related to the management of environmental education curriculum in schools might strengthen the leadership hierarchy. When all stakeholders work together, the environmental education curriculum is less likely to be seen as the traditional responsibility of the teacher.

Another theory that has been adopted in this study is distributed leadership which is discussed in detail in the following section.

2.2.2 Distributed leadership theory

According to Grenda (2011), distributed leadership theory is an emerging conceptualization that relies on multiple human resources guidance and direction. The concept of distributed leadership is characterized by activities that are related to the organization's core work (Cooper, 2012). Cooper (2012) further states that the activities are organized by members of the organization to influence the motivation, awareness, impact, or practices of other members of the organization. These activities are perceived by members of the organization as intended to impact their motivation, awareness, effect, or practices (Cooper, 2012). In my opinion, distributed leadership is a distribution of roles among relevant stakeholders. Therefore, as roles are distributed among staff, principals, subject advisors, SMTs, SGBs and teachers needs to gain a form of motivation to manage the implementation of environmental education curriculum in schools.

This approach to leadership helps the organization to take advantage of the mutual experience and shared engagement between school leaders and professional colleagues (Grenda, 2011). The school leaders and professional colleagues should work together for a common purpose, such that the outcome is greater than the sum of their acts (Elmore, 2000; Gronn, 2000; Spillane, 2005). In the school context, the term leadership is reserved for behaviours of principals, teachers, or learners, seen as affecting them all in the service of the core work of the organization (Spillane, 2006). Distributed leadership goes beyond the theory that leadership emanates only from the principal's formal role, and instead presents leadership as an activity

involving several individuals whose diverse relationships empower and direct teachers in the process of instructional reform and learning improvements (Harris, 2005; Spillane, 2005; Timperley, 2005). In my perspective, cooperation between school leaders is very important for successfully achieving a common goal of managing environmental education curriculum through the application of distributed leadership in schools.

Distributed leadership does not take the burden and power away from the principal to lead the school (Grenda, 2011). More specifically, distributed leadership allows the principal to consider the synergistic relationship between leadership and organizational frameworks, school vision, and school culture (Elmore, 2000). The definition of distributed leadership assumes that the role of administrative leaders is primarily to identify and improve people's skills and expertise in the organization, in the context of developing and enriching human ability, or density of leadership (Mayrowetz et al, 2007; Murphy, 2005; Spillane et al, 2006). Additionally, distributed leadership means fostering a structure that brings together various parts of the organization in a mutually interdependent and fruitful partnership and keeping individuals responsible for their contributions to the overall result (Harris, 2005). The view I hold concerning distributed leadership is that it is the responsibility of school leaders to distribute leadership roles and not assign tasks to school staff in managing environmental education curriculum in secondary schools.

2.2.2.1 The origins of distributed leadership

Distributed leadership is a conceptual and analytical approach to understanding how the work of leadership takes place among the people and in the context of a complex organization (Spillane, 2006). According to Gronn (2000), the concept of distributed leadership is best conceived as a group efficiency and as a collection of functions to be performed. Although academics generally adopted the idea of distributed leadership only after the turn of the millennium, the term's roots go a little deeper (Bolden, 2011). Oduro (2004) claims that distributed leadership accounts date back to 1250 Before Christ (BC), making it one of the most ancient sorts of leadership suggested for people to accomplish organizational goals. Nevertheless, concerning its theorization, Harris (2009) indicates that it is a concept that can be traced back to the mid-20s and probably earlier. Literature points that, distributed leadership dates back in the early centuries, and distributed leadership did not have a name back then

because people who were applying distributed leadership did not realise that they were distributing roles among themselves (Harris, 2009; Oduro, 2004).

Distributed leadership theory developed from social, cognitive, psychological, and anthropological theories of distributed cognition and behaviour (Spillane et al, 2001). Spillane, et al. (2001) generated a perspective on leadership experience that pays attention to leaders' thoughts and behaviours in certain circumstances. In support, Spillane (2006) stated that distributed leadership focuses on roles, characteristics, and results of individual leaders. Literature suggest that scholars have started to pay close attention to distributed leadership as one of the successful leadership styles (Spillane, 2006; Spillane et.al, 2001; Gronn, 2010).

Also in the educational landscape, the principle of distributed leadership has grown in strength and has made significant inroads into areas of theory and practice (Shava & Tlou, 2018). However, Spillane (2006) mentioned that as much as distributed leadership has grown in educational research, research has focused solely on the leadership of school principal and on identifying individual behaviours. Harris (2003) mentions that the strength of distributed leadership in schools is focusing on engaging expertise wherever it resides within the organization. Harris (2003) further mentions that in schools, distributed leadership is primarily concerned with how leadership practice is distributed among formal and informal leaders.

In literature, distributed leadership is described as the assumption that various types of knowledge are distributed among many people rather than a select few. The idea that multiple, distinct, germane viewpoints and skills can be found in individuals distributed across the group or organization is linked to the transparency of leadership boundaries. Literature suggests that distributed leadership is effective and can be applied successfully in various contexts (Bolden, 2011). Literature suggests that distributed leadership can be applied successfully in higher institutions. For example, Bolden et al (2009) conducted a study at universities in the United Kingdom, with the purpose of exploring whether the concept of distributed leadership offers a useful framework for understanding the nature of leadership. These authors found that managerialism (a phenomenon which, somewhat, constrains advances in various spaces including education) and "top-down" leadership are unsuitable in higher education (Bolden et.al, 2009). In a study published by Jones et al (2012) on distributed leadership in higher education that looked at distributed leadership in Australian universities. According to their

findings, new leadership models are needed to place an emphasis on collective collaboration rather than individual power and control. in the higher education sector to continue to graduate students with cutting-edge skills (Jones et.al, 2012). In a study which also focused on the application of distributed leadership, Nkem (2018) investigated the perspectives of teachers on distributed leadership during disruptive change. The goal of Nkem's research was to learn how teachers in University of Cameroon described distributed decision-making practice during disruptive change (Nkem, 2018). The results of Nkem's study revealed that teachers view shared leadership activities such as acknowledging and valuing teachers' efforts, counselling, cautioning, and informing students on the effects of abuse, maintaining open lines of communication, continuing dialogue with students, and collegiality as having a positive impact on distributed leadership (Nkem, 2018). Based on the literature, distributed leadership seems to be an important leadership style that any higher institution should possess as it is viewed as a mechanism that contribute to enriching graduate skills with intense skills involving collegial and cooperation skills.

In a school context, Zheng et al (2019) performed a study in China in 2019. The study looked at how distributed leadership affects teachers' self-efficacy, with a focus on the role of job satisfaction and confidence in the principal as mediators (Zheng et al, 2019). The results showed that distributed leadership has an indirect impact on teacher's self-efficacy, and that these effects are mediated by work satisfaction and confidence in the principal (Zheng et.al, 2019). In another study conducted in Pakistan by Nawab and Asad (2020) the researchers focused on the role of school leadership for teachers in a private secondary school in a Pakistani city. Their research discovered that distributed leadership is encouraged by formulating a vision for teacher growth, enhancing the capacity of individuals in leadership roles, developing a culture of trust, and providing opportunities for engagement and collaboration among teachers (Nawab & Asad, 2020).

Gomez-Hurtado et al (2020) conducted a study in Switzerland which focused on a need to adopt new leadership styles in schools, as well as other available options which may lead to reformation and application of distributed leadership. Gomez-Hurtado et al (2020) found that the outcomes represent a consistent emphasis on the principals' individual actions and the primacy of structured and bureaucratic components in the production of distributed leadership. As informed by Gomez-Hurtado et al (2020) findings, my perspective is that, the

individualized, structured, and bureaucratic nature embodied by some school principals can hinder the successfulness of the implementation of environmental education curriculum as it requires transformation of beliefs and equips staff and learners with skills to make change within the school context. As I demonstrate in the next section, on the application of distributed leadership theory in the school context, I am of the view that, the implementation of distributed leadership might enable environmental education curriculum management as it will require the participation of all stakeholders. This is likely to prevent any hierarchical coordination and control as all stakeholders are to work hand by hand. However, since this research focuses on the application of distributed leadership in the school context, the next subsection focuses on the applicability of distributed leadership in the context of the school. More importantly, I tried to highlight how this theory can be applied in the management of environmental education curriculum in schools.

2.2.2.2 The application of distributed leadership theory in schools

According to Spillane (2006) principals and or leaders may utilize the theory of distributive leadership to manage schools. This leadership style has two structural aspects, that is, the leader-plus aspect and practice aspect. The leader-plus aspect is not effective on its own, but it needs to be combined with the practical aspect. According to Spillane (2006), the dimension of leadership practice shifts the emphasis from aggregating individual leaders' behaviour to the interactions among leaders, followers, and their situation.

Within the leader-plus dimension, leadership is distributed equally amongst the office of the principal, chief executive, or corner office of a multinational company (Spillane, 2006; Hermann, 2016). Thus, the leadership position is established, decided, and performed depending on the leadership task or routine, the subject matter, the type of school, the size of the school, and the developmental stage of a school leadership team (Cooper, 2012).

Cooper (2012) further notes that the principal and, to a lesser degree, the deputy principal who conducts regular tasks and responsibilities such as instructional leadership functions, building management functions, and boundary-spanning functions provide a school leadership function or routine. The subject of what is learned in classrooms also defines how and who carries out leadership duties and interactions (Cooper, 2012). The type of school includes whether it is a charter, private, public, magnet, or Catholic school. Spillane (2006) argues that leadership is

critical in seven key areas regardless of school type, these areas are: instruction, management, human resources, micro-politics, external development, culture, and strategic planning. Owing to the sheer amount of leadership activity, the school size plays a major role in deciding the distribution of leadership in which a larger school will have more informal members than smaller schools (Spillane & Healey, 2010).

Spillane (2006) identified three management arrangements namely, division of labour, eco-performance, and parallel efficiency. Spillane (2006) conducted longitudinal studies of principals and deputy principals suggests that a single leadership role seldom assumes responsibility for a specific leadership or school feature. Cooper (2012) notes that an archetypal example of this would include the assigning of roles and duties relating to assistant principals for training, discipline, and activities. A precise division of labour in schools is, therefore, imperative in helping to identify, predict, and curtail potential barriers to the success of the school (Spillane et al, 2009). Spillane (2006) claims that there are three mechanisms for the distribution of leaders in a school or organization, namely, by design, by default, and by the crisis. According to my understanding of the concept, distributed leadership can work in two ways when school stakeholders work and make informed decisions together, not in silos. Firstly, distributed leadership can shape interaction and distribution of roles amongst school stakeholders. Secondly, distributed leadership may be influenced through designing systems and routines that allow leadership responsibilities to be distributed and teachers to be established as leaders in schools, and not just “mere” workers who takes orders from formal leaders (Spillane 2006).

However, through my reviewing of literature, I noticed that default distributed leadership is possible. Cooper (2012) states that, default leadership distribution usually occurs when internal and external stakeholders assume responsibility for leadership roles or activities not undertaken by those in the school group. The distribution of leadership by default occurs when a school leader must respond to a specific circumstance immediately due to the situation requiring immediate response or action (Cooper, 2012). The functional factor is the second part of the distributive leadership theory (Spillane, 2006), which includes the dimension of the people. People, whether in leadership positions or followership positions, are central to any leadership practice (Cooper, 2012). In my view, an action taken by people is critical in distributed leadership as it facilitate the success of the distribution process. However, all too often,

attempts to analyse the practice of leadership never goes beyond individual actions, usually individual leaders, or some attempt to aggregate actions by two or more leaders. In a distributed leadership approach, it is always important to look at how leadership practice takes shape in leadership-followers experiences (Spillane, 2006).

Continuous work on the interaction between leaders and followers has therefore, been established in three forms of interaction distributions (Spillane et al,2003; Spillane et al, 2004). The three forms of interaction distribution include a coordinated distribution that characterizes leadership activity that extends through the work of two or more leaders working in partnership with each other to accomplish the same leadership routine, collective distribution that characterizes activity that is extended through the work of two or more leaders conducting a work-in-work leadership routine (Spillane, 2006).

Copeland (2003) refers to such leadership components as distributed school leadership: group action, based on common goals; distributing task responsibility and boundary power across historically defined organizational roles; relying on an expert rather than hierarchical authority. From the conventional leadership model, where the principal has power to take all decisions and being in charge, when applying distributed leadership the principal may feel that his power is being undermined or lost, but the distributed leadership style states that while the principal has the power to recruit and fire employees, the principal's active role and impact on the school's community and emphasis has been the catalyst for change, the guardian of vision, and the chief of education (Cooper, 2012).

By the fourth year of Copeland's research project, qualitative evidence was gathered through main observations, interviews, and teacher surveys; cultures within 91% of schools became more collaborative, with teachers and parent leaders playing prominent roles in the direct and indirect decision-making process in educating students (Copeland, 2003). The study of Copeland (2003) revealed information about the importance of implementing the necessary cultural/educational changes that are imperative to enhance education principals, teachers, and learner achievement.

Spillane et al (2001) created a trend about how school leaders should consider addressing the leadership of the school as a principle of distribution. School leaders view everyday activities, priorities, and educational goals with a sense of mutual accountability with all the actors

directly involved in the school environment from a global viewpoint (Cooper, 2012). The conventional principal model is the only one that makes all the decisions replaced by a collective joint presence of deputy principals, counsellors, teachers, and curriculum experts, both directly and indirectly (Cooper, 2012; Humphrey, 2010).

A distributed leadership and transformative leadership share the same goal as one of a school leader's key goals is to have the capacity to inspire others (Aldawsari, 2016; Cooper, 2012). Another change in a school leader's conventional model is that school leaders are not autonomous micro-managers overseeing a school's protection and organization but that school leaders are macro/micro-task managers responsible for the instructional activities or ideas used within the school (Cooper, 2012).

In this research I view distributed leadership as an essential tool to manage environmental education curriculum in secondary school. Distributing roles amongst school stakeholders may help ease the burden from the shoulders of teachers because as much as the teaching of environmental education topics is bestowed on teachers, the management of environmental education curriculum is unclear in terms of who is responsible to manage environmental education curriculum in schools and teachers end up managing environmental education with less knowledge on how the management process entails (Philips, 2022). The distribution of roles might help bring balance in schools in terms of environmental education curriculum management as all stakeholders might feel involved in the organizational and management process of the school.

2.2.2.3 The nexus between transformational leadership and distributed leadership

Trammel (2016) states that distributed leadership compliments transformational leadership. A culture that is conducive to transformation is created in organizations where leadership is distributed (Trammell, 2016). In the school context, the goal and purpose of distributive and transformational leadership theories are to improve the teaching and learning process which makes these theories equally important (Cooper, 2012). According to Cooper (2012), the two theories are linked by their purpose to one another. The main purpose of distributive leadership is to actively involve leaders and followers in enhancing and improving the teaching and learning process (Trammel, 2016), while the purpose of transformational leadership is empowering others to be actively involved in the teaching and learning process (Cooper, 2012).

It is important to stretch collaboration between internal and external stakeholders when executing distributive and transformational theories, and it is imperative that within both theories/practices that co-leadership, formal and informal leadership roles emerge and are established to meet the instructional, cultural, physical, and educational needs of teachers and learners (Cooper, 2012). The argument of Cooper (2012) implies that there is a need for collaboration between internal and external stakeholders during planning, taking decisions and executing roles.

Distributed leadership continues to build on the Burns (1978) theory of transformational leadership and is another dimension that encompasses the conventional style of management (Cooper, 2012). Cooper (2012) further notes that distributive leadership is characterized by an interdependence between the individual and the world, and it demonstrates how human action is an artifact as it is transmitted in the actors' interactive network. On the same note, transformational leadership activities are distributed in collective attempts to complete complex tasks through the material and cultural objects of an environment, and through other people (Latour, 1987; Pea, 1993; Spillane, 2006). Green (2010) notes that to be successful in sharing leadership, principals must build a trust-based community in which teachers are pleased to the point of collaborating with the principal and accepting leadership roles and responsibilities for enhanced learner achievement and development. Therefore, in my view, subject advisors and principals must be effective in practicing transformative leadership that would allow them to transfer and delegate power to SMTs, SGBs, and teachers who, in turn, should be able to fulfil the school community's vision and goals.

Furthermore, leadership from a distributed perspective is a result of the principal's joint interactions with followers, and the dimension of their educational situation which includes routines and resources. Distributive leadership does not only comprise of sharing leadership but a virtually important collection of interactions between subject advisors, principal, SMTs, SGBs, teachers, and their situation. Leadership circumstances are not only the framework within which leadership practice unfolds; they are the fundamental aspect of leadership practice (Spillane, 2006).

The link between transformational and distributed leadership theory is that these leadership theories do not focus on one person, but leadership efforts are distributed and shared for the

purpose of transforming and empowering other individuals in the organization for its betterment. Likewise, in transformational leadership theory, members are encouraged to share their goals because their goals are given value and allow for growth. While distributed leadership theory is said to concentrate more on co-performance and interactions of all individuals which allows for transformation. In this research, the adoption of transformational and distributed leadership theories has a very powerful outcome as this might add significance of shared leadership for transformation to take place within stakeholders for the management of environmental education curriculum at schools.

2.2.2.4 Possible advantages of implementing a distributed leadership with transformational leadership theory

Based on the preceding assertions, distributive and transformational leadership share many similarities, but even though that may be the case, they still have fundamental differences. Cooper (2012) states that the major differences between distributive and transformational leadership theories involve the people who are responsible for determining, initiating, and establishing who are in leadership positions. Transformational leaders focus on the goal of developing individual faculty members which will contribute to enhancing their performance and leading to the growth and improvement of the school (Kirby et al, 1992). While in distributive leadership the educational situation determines the leadership act, duty, routine, and role (Kirby et al, 1992).

Literature suggests that in the process of leading schools, distributed leadership makes use of multiple leaders, and this involves schools that have co-principals who divide and share responsibilities of running the school (Spillane, 2006). In distributive leadership, leadership is more than what other individuals perceive it to be in respect of formal leadership roles as this form of leadership allows all stakeholders to take responsibilities and roles in running the school and other leadership functions (Cooper, 2012). Therefore, in this research, there is an advantage of using both transformational and distributed leadership theories as this allows for greater collaboration, sound decision making, shared organization values and goal between subject advisors, principals, SMTs, SGBs and teachers to manage environmental education curriculum in schools. However, a major gap has been identified in the literature in examining the differences and similarities between distributive and transformational leadership theory

(Aldawsari, 2016; Nielson & Gahlwat, 2012). The social constructivism theory, discussed below, is another theory that underpins this study.

2.2.3 Social constructivism theory

The emphasis of social constructivism theory is on the importance of understanding the occurrence of events and the construction of knowledge and the culture of the society (Vygotsky, 1978; Derry, 1999; McMahan, 1997). On the same note, Amineh and Asl (2015) state that social constructivism theory examines how people perceive the world. In social constructivism, the emphasis is on the importance of interactions of teachers, parents, and peers in the process of building knowledge (Vygotsky, 1978). However, in this research, the knowledge construction of distributed and transformational leadership focus on the interaction of school stakeholders to manage environmental education curriculum in schools through social interactions aimed at knowledge generation in school. Campbell (2004) also supports the notion that valuable learning takes place during social interaction, as social interactions are a form of informal learning.

The point made by, *inter alia*, Vygotsky (1978) and Bandura (1985) points that when individuals are focused on shared practices, they are actively constructing the cognitive tools needed for growth as human beings. Vygotsky (1978) introduced a concept which is the Zone of Proximal Development (ZPD). The ZPD recognizes that people usually obtain high-level skills when they get assistance, encouraged, and coached by other people (Martinez, 2010). In the current research, I am of the view that when teachers are encouraged, assisted, and coached they are more likely to obtain and practice high skills when teaching and managing environmental education curriculum in schools. This is because a person with more knowledge can enhance another person's learning by guiding them through a task slightly above their aptitude (Vygotsky, 1978). The next section discusses the evolution and essence of social constructivism theory.

2.2.3.1 The evolution and essence of social constructivism theory

Lev Vygotsky developed social constructivism after rejecting an assumption which was made by Piaget that learning can possibly be separated from its social context (McLeod, 2018). The essence underlying this theory is that the significance, meaning, and understanding can be

developed in coordination with other human beings (Vygotsky, 1978). Kim (2001) states that an assumption of social constructivism relies on reality, knowledge, and learning

1. Reality

From the perspective of social constructivists, human activities construct reality. Members of society together invent the properties of the world (Kukla, 2000). For a social constructivist, reality cannot be discovered: it does not exist before its social invention (Vygotsky, 1978). From the view of Vygotsky (1978), reality is subject to social interaction.

2. Knowledge

Social constructivists believe that knowledge is constructed through cultural and social interactions (Ernest, 1999; Gredler, 1997; Prat & Floden, 1994) and meaning is created through the individual's interactions and their environment (Vygotsky, 1978). Knowledge is believed to reside within people's culture and their interaction with their environments (Shunk, 2000; McMahon, 1997). The construction of knowledge is also influenced by the intersubjectivity formed by cultural and historical factors of the community (Gredler, 1997; Prawat & Floden, 1994). In my opinion, knowledge cannot be inherited but it is acquired from those who are more knowledgeable and experienced. Knowledge is not something that can be constructed in isolation to engagements and interaction as knowledge must be backed up by application and/or practicality. In this research, environmental education knowledge should be constructed through interactions with school stakeholders who are more knowledgeable with the environmental content so that the same knowledge can be imparted to learners.

3. Learning

Learning is viewed as a social process by social constructivists. External forces do not shape learning and it is not a passive development behaviour that takes place within an individual only (McMahon, 1997). Learning takes place during the engagement of individuals in social activities (Vygotsky, 1978). The view of Vygotsky (1978) indicates that learning takes place when social engagements or interaction are happening as an individual learns from other people, through their approaches on life, their beliefs and experiences. There are two aspects of the social context that affect the extent and nature of learning that are discussed by social

constructivists, these are historical developments and social interactions (Gredler, 1997; Wertsch, 1991).

Learners inherit historical developments throughout their lives, these include symbol systems; logic, mathematical systems, and language as members of a particular culture (Wertsch, 1991). How and what is learned is dictated by these symbol systems (Gredler, 1997). The social interaction between the more knowledgeable others and the learners is very important (Wertsch, 1991). In the context of education, lacking social interaction with the more knowledgeable others makes it difficult for learners to get the social meaning of important symbol systems and how to put them into use (Gredler, 1997). The importance of collective learning is emphasized by social constructivism. Accordingly, from this perspective, collaboration among students and teachers is considered a key element in the promotion of learning (Thomas, 2017). This is because learning in a social constructivism setting is focused on real-world adaptive problem solving through mutual experience and discussion with others. Here new concepts are balanced against existing information, and the learner adapts rules to make sense of the world (Draper, 2013). Draper (2013) asserts that group problem solving, group inquiry, simulations, and discussions are all examples of collective learning activities. Building from the statements of Wertsch (1991) and Gredler (1997), thinking abilities of young children are developed by the interaction between them and adults. Both the context in which learning takes place and the social contexts brought to the learning environment by learners is recognized as being crucial by social constructivists. In this research, interactions between subject advisors, principals, SMTs, SGBs and teachers is considered crucial for the management of the school, sharing ideas on curriculum and, in the context of this study, the generation of ideas through mutual engagement with the view to effect and enforce environmental education curriculum implementation through transformational thinking and distributed leadership, among other things.

2.2.3.2 Social constructivism theory and environmental education

The focus of social constructivism theory is the relationship between people and their surrounding environment (Kim, 2001). Human beings are constructed as part of the environment and the individual is constructed by the environment (Gredler, 1997; Bredo, 1994). The tasks of each member rely on social relationships and the environment of group members, if there is a change in their environment, also their tasks are bound to change (Bredo,

1994; Gredler, 1997). Therefore, in my opinion learning must take place within the environment and not in isolation. Social constructivism is important in teaching environmental education, as learning does not happen in isolation from the environment of the learner. Teaching people about their environment encourages them to work collectively and take decisions to mitigate environmental threats and sustain their environment.

In my view, teaching and learning about environment is more about empowering citizens to solve environmental problems that surround them. This kind of teaching and learning can take place in formal or informal settings, where learners can be taught in schools, and at homes about the environment. This process of learning and teaching is associated with learning from the more knowledgeable others who can be teachers, peers, or parents. In this research, the reality is the educational setting in which school stakeholders' interactions and activities take place to facilitate the management of environmental education curriculum in schools. In the management of environmental education curriculum knowledge might be constructed through the interactions of school stakeholders, therefore the knowledge of which teachers pose in terms of leadership is constructed from the leadership traits that the management team of the school poses and teachers have a potential of demonstrating the practices of the SMTs and subject advisors. In the context of this research, learning is influenced by other individuals who we interact with. School stakeholders need to work together and engage with leadership activities when decisions are taken for the curriculum to be developed, planned, and managed.

2.3 THEORETICAL FRAMEWORK OF THIS RESEARCH

The theoretical framework of this research was used to explore the roles of school stakeholders in the management of environmental education through the application of distributed leadership where leadership roles are distributed equally and not delegated to effect transformation in improving the effectiveness of the teaching and learning process of environmental education in schools and the adoption of social constructivism where people learn from each other. The graphical representative below shows the influence of the three theories on the effectiveness of environmental education curriculum management.

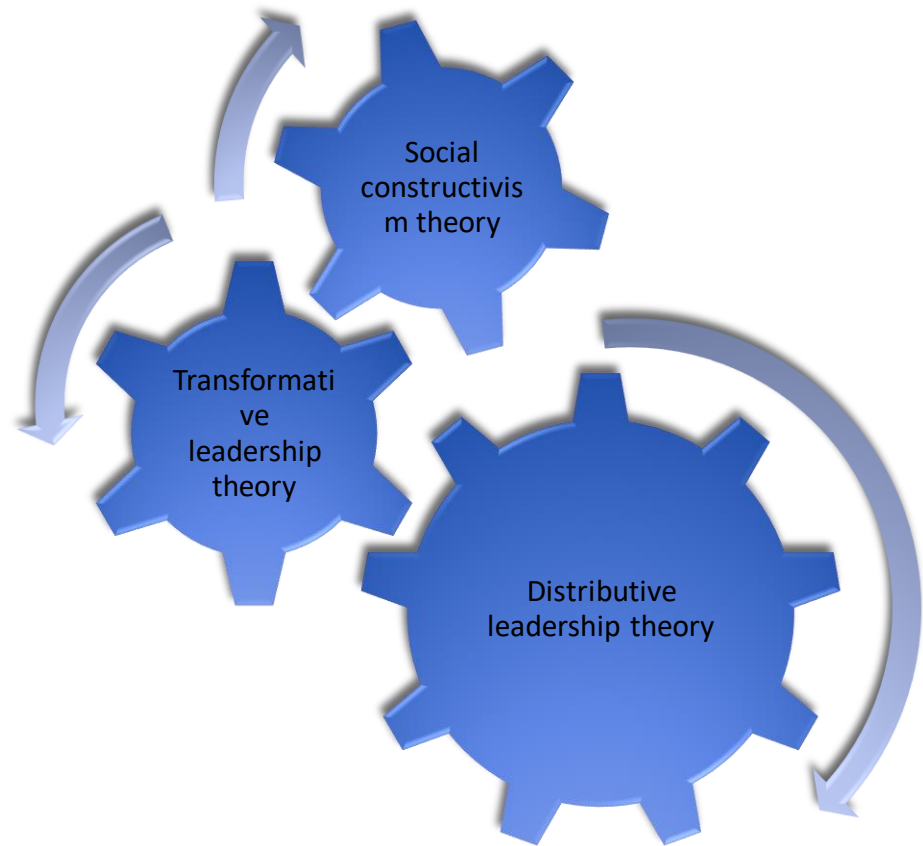


Figure 0.2: Graphical theoretical framework

The theoretical framework of this research was developed to support the aim of the study to find out how distributed leadership is used in selected secondary schools of UGU District of Basic Education and, if so, to what extent is it used to enable the implementation of environmental education. The application of these theories helped in this research to identify the challenges and opportunities that principals, subject advisors, teachers, and SMTs come across in managing the environmental education curriculum through distributed leadership, explore the availability of distributed leadership strategies that could contribute to the successful management and implementation of the environmental education curriculum in schools and to determine the role of school principals, SMTs, teachers, and departmental officials for better management of environmental education curriculum. In comparison to all other theoretical frameworks, the distributive leadership, transformational leadership, and social constructivism theories, brought together, provide a critical evaluation of the strategies used by principals, SMTs, teachers and subject advisors to manage environmental education

curriculum in schools. Thinking about principals, SMTs, teachers and subject advisors as distributive and transformational leaders and social constructivists directed me to study workplace conditions. It also refers to the professionalism of principals, SMTs, teachers and subject advisors in decision-making at the level of school organization and the level of educational groups. This approach recognized that focus should be on creating a positive school climate for all participants in educational process which would make the school a “better place for living and learning and managing environmental education curriculum” and that can be achieved by the practice of distributive, transformational leadership, and social constructivism style. Distributive, transformational leadership and social constructivism theories are very substantial for schools to move forward.

2.4 SUMMARY

This chapter focused on the three theories that underpinned this research, i.e., distributed leadership theory, transformational leadership theory and social constructivism theory. This section discussed the link between these three theories and their position in education. I adopted these theories because they might be applicable to the successful management of environmental education curriculum in schools. Also, in this chapter I have discussed how the theories have been applied in schools and that made me deem them appropriate for this research and their potential is further discussed in the discussion of findings chapter (Chapter 6). Moreover, literature alluded to the possibilities of stakeholder engagement outcomes if these three theories are adopted for the leadership of the schools.

3. THE SYNTHESIS OF ARGUMENTS ON ENVIRONMENTAL EDUCATION IN THE SPECTRUM OF DISTRIBUTIVE AND TRANSFORMATIVE LEADERSHIP

“Education is learning the extent of one’s ignorance”

Raymond C Nolan

3.1 INTRODUCTION

In the previous chapter, I outlined the theoretical framework that underpins this study. Nolan’s quotation is relevant to this chapter as it draws the link between what we learn and how we should apply the knowledge acquired to our daily activities (Nolan, n.d). Thus, in this chapter, I discussed the literature that I considered pertinent to this research. This includes historical and current discourse such as studies conducted by other scholars, and contemporary discussions and views deemed relevant to this research.

The process of literature review is to inform and direct a researcher on the subject area and for a better understanding of the literature (O’Gorman & MacIntosh, 2015; Arshed & Danson, 2015). Accordingly, in this chapter, literature review focuses on the definition of environmental education, the importance of environmental education integration in pedagogy, models of environmental education integration. The history and evolution of environmental education literature have been reviewed for the development of this study. Also, the concept of the school curriculum management which also forms the basis of this study has been reviewed in this chapter. Additionally, distributed leadership, constructivism, and environmental education curriculum, curriculum assessment policy statements, and the position of environmental education in the Natural Science Grade eight and nine (8 & 9) public school curriculum in South Africa have also been reviewed. Furthermore, the Sustainable Development Goals, particularly, their significance in the environmental education curriculum have also been given attention in this chapter.

3.2 THE DEFINITION OF ENVIRONMENTAL EDUCATION

The concept of environmental education is made up of two distinct words, namely, environment and education. Many scholars have provided definitions of the term's "environment" and "education" individually and as a single concept, i.e., environmental education. In this section, I reflect on the definitions of these concepts.

3.2.1 Environment

The term "environment" refers to the totality of abiotic and biotic factors that influence organism (Katsoulakos et al, 2016). According to Kaklauskas and Gudauskas (2016), the environment also includes developed environments, also known as man-made structures. Larsson (2009) argues that the environment has expanded well beyond the confines of the local environment and that it is now the intimate confinement of an individual or a local human population as well as the worldwide realm of the human species. Accordingly, Larsson (2019) defines the term environment as an umbrella term that encompasses all factors that, by their intricate interrelationships, provide the framework, setting, and living conditions for people, either by their mere existence or by their impact.

There are two major components to an environment. This comprises both natural and physical components, as well as cultural and/or human components.

3.2.1.1 The components of the environment

The natural and physical components of the environment comprise of biotic and abiotic factors (Matthew et.al, 2020). Any living component that impacts another organism or shapes the ecosystem is referred to as a biotic factor (Lewis et al, 2017). This comprises creatures that consume other organisms in the environment, as well as the ecosystem itself (Lewis et.al, 2017). Abiotic factors, on the other hand, are any non-living elements such as location, topography, geological structure, climate, and energy (Lewis et al, 2017).

Apart from biotic and abiotic factors, the environment is also composed of the social, economic, and political environments which are all part of the cultural and human components (Wang et al, 2020). The term "economic environment" refers to any external economic elements that influence consumer and business purchasing behaviours, and

which have an impact on individuals (Roman & Rusu, 2016). The state, government, and its institutions and legislations as well as the public and private stakeholders who operate and interact, make up the political environment (Tripriyono et al, 2017). The diagram below by Coman and Cioruta (2019) illustrates the components of the environment.

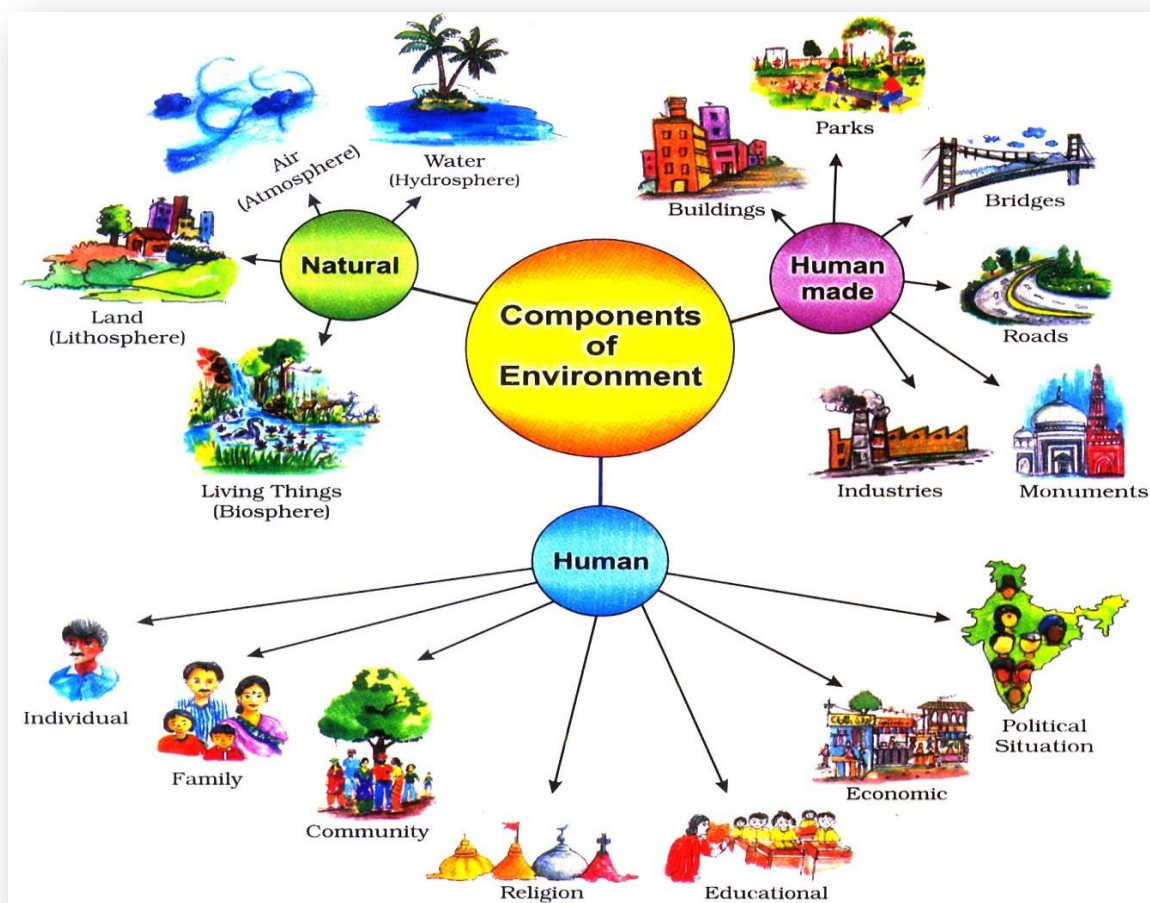


Figure 0.1: The major components of the environment (Coman & Cioruta, 2019)

In the above diagram various components of the environment are represented. These include the natural which involves the water, air, land and buildings, parks, bridges, roads built by humans, and the human element involves individuals, family, community, religion, educational, economic, and political structures. As I have illustrated in my definition of the concept of environment there are numerous definitions for this concept. Accordingly, in this research the definition by Larsson (2009) is preferred as it is in line

with the objectives of this research. According to Larsson (2009), the environment is viewed in its entirety, considering all of its components.

However, the right platform to learn about one's environment is through education. The next page discusses the concept of education and how education contributes to one's environment and in learning about their environment.

3.2.2 Education

According to Naziev (2017), education is a socially controlled and regulated process of continual transmission of socially meaningful experiences from past generations to subsequent generations. On the same note, Hytten and Bettez (2011) describe education as the process of preparing a person to achieve his or her goals by fully utilizing all his or her abilities possible as a member of society. According to Hassan (2018), education is defined as "any contact or association that occurs between adults and children as an area or situation where educational work is in progress." It is critical to provide quality education to the kids to establish a sound and better society (Idris et al, 2012). Quality education is a fourth goal in the 2030 Sustainable Development Goals initiated by UNESCO-UNEP; therefore, it is imperative that school stakeholders meet this goal by ensuring that students are equipped with necessary skills which indicates that they have received quality education that is relevant to their daily lives.

According to Thangeda et al (2016), quality education has three components which include skills for processing information, absorbing past values, and creating an optimal learning environment. When (Thangeda et al, 2016) mentioned skills for processing information, they are referring to the help for students to gain all sorts of abilities such as critical, creative, and problem-solving skills for processing information that they may utilize in their daily lives. Thangeda et al (2016) state that people learn the truth and self-giving through education and this refers to the transfer of knowledge of these ideas such as progress and perfection, which may be taught through education. People can learn from each other, where children learn from their adults or peers. The preceding definitions of the concept education are in line with the theory of constructivism, which undergirds this research, because social constructivism theory promotes learning from others and socially

constructed meanings are derived from interacting with others, and shared values (Vygotsky, 1978).

3.2.3 Environmental Education

According to Abboud (2021), environmental education is a holistic, lifelong learning process aimed at developing responsible persons who investigate and identify environmental challenges, engage in problem-solving, and effectively take action to enhance the environment. Luna-Krauletz et al (2021) define environmental education as a process in which topics build knowledge and build capacity, behaviour, and values to enable understanding of the social and social realities that create a responsible relationship and implement environmental actions to address environmental problems.

According to Shutaleva et al (2020), environmental education is a framework for sustainable education that involves developing ways to satisfy the requirements of existing people while not denying future generations the chance to live and meet their needs. In their definition of environmental education, Ardoin et al (2020) argue that environmental education is a conservation approach that generates such synergistic areas providing scientists, policymakers, community members, and other stakeholders with chances to converge. Environmental education is critical for promoting environmental knowledge and consciousness, both of which are necessary for good human-nature connections (Erkal & Gursoy, 2013).

In the application of environmental education, Lucas (1972) coined three terms to describe broad approaches to environmental education namely education *About, In/ Through and For* the environment which have gained wide acceptance in the field. *About* focuses on natural ecosystems and information related to social issues (Reddy, 2021). Education *in or through* the environment is concerned with experiential learning in the environment and how this contributes to development of learner competencies and values clarification abilities (Lucas, 1972). Education *for* the environment is and has a critical agenda of education for social change and transformation through action-based involvement in resolving environmental problems particularly in local contexts (Lucas, 1972).

Education for the environment as described above, after Lucas 1972 is different and often not easily assimilated into conventional education practices. Rather, this is similar to transformative education described above by Jickling and Wals (2008), and such approaches to environmental education are reformist and transformative and intent on challenging dominant practices and the status quo in general. The approaches to education highlighted by these authors link almost seamlessly to approaches to environmental education developed in the field as preferred pedagogical procedures and strengthens the probability for the management of environmental education as part of the school curriculum.

The three approaches of environmental education focuses on continuously linking content with context in order to make learning real and relevant. Another important aim of environmental education is to develop independent, critical thinkers who have the knowledge, skills, awareness and attitudes to act in the interest of the environment on a personal and a societal level (Reddy, 2021).

In the context of this research, environmental education can be viewed as a social, ecological, economic, and cultural contextual element that is more focused on incorporating action for change of behaviour, thoughts, and retrieval of knowledge in various contexts. There are various benefits associated with environmental education as I have outlined the in the following section.

3.2.3.1 The benefits of environmental education

The primary advantage of environmental education is that it boosts academic performance and increases student involvement in environmental activities (Bartosh, 2003). Environmental education, for example, provides an engaging approach for both students and teachers to relate their appreciation of the natural world to academics in a world where it is becoming increasingly difficult to keep students engaged in classroom courses (Erhabor & Don, 2016). Environmental education stresses specific critical thinking skills that are important and essential for enhancing excellent science of questioning, exploring, making hypotheses, interpreting evidence, analysing, developing conclusions, and solving issues, which helps generate confidence to study and address local problems (Kostova & Atasoy, 2008). According to Kwee (2021), students must be taught the skills and

information needed to research and solve problems, as well as be encouraged to pursue jobs in sustainable education management. Therefore, environmental education is one of the most essential elements needed for developing and enhancing various skills already mentioned above. Additionally, environmental education boosts creativity, so it is crucial to present students with projects that address environmental issues.

To increase environmental consciousness, environmental education is critical. Humans require awareness to take measures toward maintaining our environmental surroundings, which can only come from researching topics relating to our ecosystems. Environmental education is also necessary to ensure long-term viability of the environment (Tlhagale, 2004). Having a sustainable future involves ensuring that the earth's resources can meet the demands of future generations while also ensuring that the current consumption of those resources is sustainable (Tlhagale, 2004). In this way, environmental education may help people comprehend and respond to all the consequences of over-exploitation (Elfving & Ristimaki, 2011).

Environmental education is also beneficial to one's health. The depletion of the environment has an impact on both physical and mental health (Komane, 2005). These, on the other hand, can thrive if we spend more time in nature. One of the advantages of this sort of education is that it does not take place only in the classroom (Tapia-Fonllem et al, 2020). Students who would not have spent this time outside otherwise benefit from the peace and healing benefits of nature. Eco-Therapy is the term for treatment using natural methods (Richardson et al, 2018). Therefore, environmental education can help people see themselves as hidden artists (Inwood, 2013). Natural products are frequently used in creative work (Inwood, 2013). These works of art have the potential to raise awareness about environmental problems (Sunassee et al, 2021). Environmental education teaches students how their choices and actions affect the environment, as well as the knowledge and skills needed to address complicated environmental concerns and strategies to keep our ecosystem healthy and sustainable in the future (Ardoin et al, 2020). People learn about climate change through environmental education (Edsand & Broich, 2020) and other global crises such as Covid-19 precautions to combat the spread. In the fight against global warming, environmental education is critical.

3.3 THE IMPORTANCE OF ENVIRONMENTAL EDUCATION INTEGRATION IN PEDAGOGY

A curriculum that integrates several disciplines in some way is known as curricular integration (Drake, 2012). As a result, including environmental education into pedagogy entails incorporating environmental concerns into the existing curriculum in all subjects. Because environmental education can only assist a few learners if it is integrated into the curriculum of a single subject, it must be integrated across the curriculum of other subjects (Verma & Dhull, 2017). Environmental education must be integrated since the concept of the environment cannot be confined to a single field (Sukma et al, 2020). Environmental education is vital to include in the school curriculum because it covers all aspects of world crises.

Environmental education is perceived as a viable response to environmental issues around the world. According to Reddy (2021), for environmental education to contribute to the transition to sustainable living, teachers must play a critical role. Teachers who are knowledgeable about environmental education are an important component of achieving effective environmental education (Sukma et al., 2020). Teachers play a critical role in developing environmentally conscious citizens who advocate for a new social order (Karatekir, 2019). Some of the most successful approaches that could be used to enable an environmentally oriented teaching is the use of student-centred learning, harnessing student strengths, demonstrating experiential teaching orientation, using collaborative techniques, involving external experts, and constantly pondering and planning lessons (Mustam & Daniel, 2016). These approaches would be expected from teachers who are environmentally literate. Teachers that possess strong environmental literacy, have, inter alia, support from other stakeholders within the school, favourable environmental attitudes, environmental sensitivity, and receive environmental education and, are more likely to succeed (Ernst, 2007) in the integration of environmental education. These are the teachers who seek to instil environmental education in their students (Reddy, 2017).

This research supports the views by Reddy (2021); Karatekir (2019); Mustam & Daniel (2016); Ernst (2007) and Reddy (2017) who assert that teachers have a vital role to play in developing, integrating, and implementing environmental education. However, this

research also recognizes the important roles that could be played by other stakeholders in the integration and management of environmental education curriculum in schools. Stakeholders such as SMTs and subject advisors could work collaboratively to provide this kind of support I am calling for through transformative approaches as entailed in the notion of distributed leadership to enable the realization of the management of environmental education curriculum. The integration of environmental education is facilitated through different models and/or approaches developed by various scholars. In my view, environmental education management should have a model to be adopted to ensure the successfulness of the implementation of environmental education curriculum management. In the following sections various models for environmental education integration are discussed.

3.4 MODELS OR APPROACHES OF ENVIRONMENTAL EDUCATION INTEGRATION

The integration of environmental education comprises various models or approaches. However, in this section I will discuss few models that I found relevant to the current research. Various models have been developed by scholars that are relevant for urban and rural schools. Some of these models are not practical for an African child as there are numerous barriers in applying them in rural schools as some schools lacks teaching and learning resources. Therefore, it was imperative for me to concentrate on a model relevant for the context of the current research.

For example, Mwenda (2017) carried out research in Tanzanian ordinary secondary schools, concentrating on learning for sustainable development and integrating environmental education. According to Mwenda (2017), most environmental education competencies are taught mostly through the geography curriculum, with some biology (also known as Life sciences) using an integrated teaching approach. An integrative approach to teaching is centred on emphasizing both theory and practicality in the classroom (Mwenda, 2017). Application or practicality and theory approach is relevant to the current research to manage environmental education curriculum.

Mwenda (2017) further affirms that to generate a more effective understanding and links of essential ideas, the integrative approach purposely weaves together information, skills, attitudes, and values from within or beyond topic areas (Mwenda, 2017). This approach of environmental education integration places a greater emphasis on disseminating information and understanding about environmental sustainability, as well as providing citizens with the essential skills and changing attitudes and values. As highlighted by Baxte and Jack, (2008), the adoption of an integrative teaching approach has benefits. These benefits include enabling teachers to plan for the development of key skills and understandings that cut across individual strands and subjects, while assisting students in drawing on a variety of prior knowledge and experiences, supporting their holistic worldview, and ensuring more meaningful learning (Baxte & Jack, 2008). Black and Wiliam (1998) supports the notion that younger learners take in a lot of information and absorb and arrange it all at once. Therefore, presenting concepts as a whole rather than in separate parts will better reflect how young pupils' brains receives information (Mwenda, 2017). Additionally, Drake (2004) considered an integrated teaching approach was the way forward for education in the twenty-first century since it linked curriculum and instruction to real-world scenarios. An integrated teaching method that offers a high potential for the identification of pertinent, highly stimulating challenges is the problem-based education model (Mwenda, 2017).

On the other hand, incorporating environmental education into other topics poses a variety of limitations and challenges for educational systems (Johnson, 2005 and Palmer, 1998). It is believed that learners fail to develop a clear understanding of what various disciplines or types of knowledge contribute to the understanding of an environmental topic when environmental education is integrated into the content of other subjects (Kadji, 2002). Furthermore, there seems to be no clear implementation plan, which makes it challenging for teachers to connect environmental education curriculum with subject matter (Mwenda, 2017). As a result, many teachers are uncomfortable about integrating environmental education in their lessons (Drake, 2004). Additionally, it is believed that not all subjects give environmental education integration the credit it deserves (Mwenda, 2017).

The findings by Mwenda (2017) revealed that there is lack of support by the other stakeholders, which in my view also seem to be the case with the integration and

implementation of environmental education curriculum in schools. My view is informed by the study of Mawela (2016) who found that there is lack of support from non-governmental organisations to support environmental education projects in primary schools. However, the current research focuses on the management of environmental education curriculum through distributed leadership which might have a potential to promote stakeholder engagement which may lead to both theory and practicality in schools as encouraged by integrative teaching approach.

As mentioned earlier in this chapter, environmental education is a process of learning and discovering all aspects that make up our surroundings and linking the aspects of our environment with education. Since education is about the environment, it is important to complement the purpose of the current research to ensure that the fourth sustainable development goal (to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all) is met. This goal can be achieved by stakeholders working together pose a strong force in solving environmental problems which is the first goal of environmental education. The discussion of the integrative teaching approach was deemed essential as it emphasises that environmental education is important and that there are various ways in which environmental education could be managed. As discussed later in chapter six, the findings of this research indicate that there are indeed various approaches to environmental education. Additionally, in chapter six, informed by the findings of this research and some of the models referred to in this section, I present another possible model for environmental education management.

3.5 THE HISTORY AND EVOLUTION OF ENVIRONMENTAL EDUCATION

This section outlines the history and evolution of environmental education in the International and South African context. The concept of environmental education was developed and discussed before the 1970s. Many conferences were held which contributed to the development and refinement of the concept of environmental education.

3.5.1 The history and evolution of the concept of environmental education in the international context

In this section I provided an outline of the origin of the concept of environmental education, and I also reflected on various conferences, summits and other events that directly and indirectly contributed to the advancement of environmental education.

Environmental education originated in the 1960s as a term to describe the educational aspects of the environmental movement, which was concerned at the time about air and water quality (pollution), global population expansion, continued depletion of natural resources, and environmental degradation (Gough & Gough, 2010). In 1969, William Stapp published the first definition of environmental education in the *Journal of Environmental Education* (Stapp, 1969). At many conferences, the concept of “environmental education” was discussed.

The first United Nations Conference on Environmental Education was held in Stockholm, Sweden, in 1972, and resulted in a Stockholm declaration including 26 principles for sound management of the environment (Stockholm, 1972). In 1975, the worldwide workshop on environmental education was conducted in Belgrade, Yugoslavia, following the Stockholm Summit (Fensham, 1976). The Belgrade Charter is the result of this workshop (Fensham, 1976). The Stockholm framework gave birth to the Belgrade Charter. The Belgrade Charter stated the aims, guiding principles, participants, and goals of environmental education (UNESCO-UNEP, 1976). A definition of environmental education was suggested and broadly agreed at this workshop:

Environmental education is a process aimed at creating a global population that is aware of and concerned about the entire environment and its problems, as well as having the knowledge, attitudes, motivations, commitments, and skills to work individually and collectively toward solving current problems and preventing new ones (UNESCO-UNEP, 1976).

In 1977, the first Intergovernmental Conference on environmental education was held in Tbilisi, Georgia, USSR. The Tbilisi Declaration, which is the definitive statement on what environmental education is and should be, was drafted at this meeting (Tbilisi, 1977).

Environmental education goals discussed at this conference include: (a) fostering clear awareness of and concern about economic, social, political, and ecological interdependence in urban and rural areas; (b) providing every person with opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment; and (c) creating new patterns of individual's behaviour, society and groups as a whole towards the environment (UNESCO, 1972).

The Brundtland Report, also known as *Our Common Future*, was published in 1987 by the World Commission on Environment and Development (WCED), and it presented the concept of sustainable development and detailed how it could be achieved (Brundtland, 1987). The report's introduction to sustainable development focused and undertook resolutions on several things, including (a) improving the quality of life, (b) promoting values that encourage consumption standards that are within the bounds of the ecological possible and to which all can reasonably aspire, and (c) sustainable development which requires societies to meet human needs both by increasing productive potential and by ensuring a stable environment, (d) only if population changes are in sync with the changing productive potential of the ecosystem can sustainable development be achieved, (e) sustainable development must not jeopardize the natural systems that sustain life on earth: the atmosphere, the waters, the soils, and the living creatures; (f) the world must assure equitable access to the limited resource and refocus technology efforts to alleviate the problems; (g) In order to achieve sustainable development, the rate of depletion of non-renewable resources must be as low as possible, (h) Plant and animal species conservation is required for sustainable development, (i) In order to maintain the ecosystem's overall integrity, sustainable development necessitates minimizing negative impacts on air, water, and other natural elements, and (j) Sustainable development is a transition process in which resource exploitation, investment direction, technology development orientation, and institutional change are all in sync, enhancing both current and future capacity to meet human needs and ambitions (Brundtland, 1987).

The Tbilisi principles, also known as Tbilisi +10 principles, were confirmed as sound recommendations for the development of natural environment and education programs during an international conference on environmental education held in Moscow in 1987 (UNESCO-UNEP, 1987; Irwin & Lotz-Sisitka, 2005). Additionally, the concept of

sustainable development was established during this meeting (WCED, 1987). Principles such as, consider the environment in its entirety-natural and built, technological and social (economic, political, cultural-historical, moral, and aesthetic); promote value of, and the necessity for, local, national, and international cooperation in the prevention and solution of environmental problems; and problem-solving skills and values were added to the 1977 Tbilisi principles (UNESCO-UNEP, 1987).

In Rio de Janeiro, Brazil, the Rio Earth Summit/United Nations Conference on Environment and Development took place (UN, 1992). Agenda 21 was the result of this summit. Chapter 36 of Agenda 21 focused on reorienting education toward sustainable development, raising public awareness, and encouraging training (UNCED, 1992). The agenda 21 underlines the importance of large-scale environmental education programs in responding to environmental catastrophe. A treaty on environmental education for sustainable societies was one of the summit's outcomes (UN, 1992). The Biodiversity Convention, the first treaty to address the ownership of genetic resources, was also produced at the Summit (UNCED, 1992). The Rio Declaration, a statement of 27 principles for sustainability, was another important accomplishment of the Earth Summit. The Treaty on Environmental Education for Sustainable Societies recognized the central role of education in shaping values and social action and resulted in the NGO Forum Principles of Environmental Education for Equitable and Sustainable Societies (UNCED, 1992).

In 1992, the UN General Assembly held a Special Session known as Rio+5' to review progress made by countries. Environmentalists and policymakers from across the world convened in Rome to assess progress since the Earth Summit in 1992 (McCrea, 2006). They emphasized the need for environmental education in promoting sustainable development. The International Conference on Environment and Society: Education and Public Awareness for Sustainability (also known as Tbilisi +20) took place in Thessaloniki, Greece, during the same year (UNESCO, 1997). It resulted in the Thessaloniki Declaration. The conference resulted in the UNESCO document, Education for a Sustainable Future: a transdisciplinary vision for concerted Action, which was released in 1997 (UNESCO, 1997).

In 2007, the Centre for Education hosted the 4th International Conference on Environmental Education (also known as Tbilisi +30) Education for a Sustainable Future Conference in Ahmedabad, India (UNESCO, 2005). It was the first worldwide assembly hosted by the UN Decade of Education for Sustainable Development (2005–2014). The Ahmedabad Declaration on Education for Sustainable Development was the result of the conference (UNESCO, 2005). The Ahmedabad Declaration emphasized that "education is for life and life through education" (UNESCO-UNEP, 2007, 1). This conference highlighted the importance of green jobs for young entrepreneurs in poor countries to combat climate change while also contributing to the local economy (UNESCO-UNEP, 2007).

In 2012, the United Nations Conference on Sustainable Development (commonly known as Rio +20) took place in Rio de Janeiro (UNESCO, 2015). As a result of this conference, the document known as the "*The Future We Want*" was created, a proclamation on sustainable development and a green economy (UN, 2015). In 2016, the 17 Sustainable Development Goals (SDGs) were unveiled (UNESCO, 2017). The Sustainable Development Goals (SDGs) are a call to action for all countries – wealthy, poor, and middle-income – to increase prosperity while safeguarding the environment (UNESCO, 2017). Sustainable development goals were viewed as a shift away from environmental education and toward education for sustainable development. The move from environmental education to sustainable development education has further muddled the definition of environmental education and its place in the curriculum (Gough, 2016). Gough (2016) argues that while most would agree that environmental education is necessary, there is still debate over what it is and how environmental education fits into an already overburdened curriculum. Therefore, this means there is still no clear structure of how environmental education should be managed within the curriculum.

The UN Environment and the Government of the Republic of Serbia, with the support from the Italian Ministry of Environment, Land, and Sea, convened a Ministerial conference on "*Innovative Solutions to Pollution in Southeast and Southern Europe*" which took place on 4-5 December 2018 in Belgrade, Serbia (UN, 2018). On 10 May 2018, the UN General Assembly (the Assembly) adopted, resolution 72/277 entitled "Towards a Global Pact for the Environment" (UN, 2018). Considering the pressing

environmental challenges, the initiative for a Global Pact for the Environment aimed to provide an overarching framework to international environmental law aimed at further solidifying, consolidating as well as advancing international environmental law considering pressing environmental challenges (UN, 2018). The initiative also aimed to improve the implementation of international environmental law in furtherance of the Sustainable Development Goals as well as globally agreed environmental goals and targets (UN, 2018). According to the resolution's text, the United Nations Environment Assembly decided to establish an ad hoc open-ended working group to consider a technical and evidence-based report that identifies and assesses possible gaps in international environmental law and environment-related instruments to strengthen their implementation (UN, 2018).

For this discussion, it is also important to highlight the role played by The United Nations Environment Assembly, as the activities undertaken by this assembly directly or indirectly influence the advancement of environmental education. It addresses the critical environmental challenges facing the world today (UNEA, 2019). Understanding these challenges and preserving and rehabilitating our environment is at the heart of the 2030 Agenda for Sustainable Development (UNEA, 2019). In Nairobi, Kenya, The Environment Assembly meets biennially to set priorities for global environmental policies and develop international environmental law (UNEA, 2019). Through its resolutions and calls to action, the Assembly provides leadership and catalyses intergovernmental action on the environment (UNEA, 2019). Decision-making requires broad participation, which is why the assembly provides an opportunity for all peoples to help design solutions for our planet's health (UNEA, 2019).

The United Nations Environment Assembly hosted a virtual consultation in Oslo, Norway in June 2020 which marked the beginning of the decade of action for nature. This super year for nature was derailed by the COVID-19 outbreak, but the urgency to act for nature has not diminished. The action for nature involves understanding the importance of nature for climate (which is restoring and sustainably managing the world's ecosystems that could provide more than a third of our climate mitigation solutions), the importance of nature for security, health, and well-being (nature buffers us from natural disasters, prevents the

next pandemic, provides water and nutritious foods, and offers respite from an increasingly urban world) and so on (UNEA, 2020).

In 2021, the 9th international conference on sustainable development was hosted virtually in September. The theme of this conference is *Research for Impact: An Inclusive and Sustainable Planet* (International Conference in Sustainable development, 2021). An array of themes related to Sustainable Development Goals were covered for example, sustainable development goal learnings from COVID-19 for science-informed decision-making; sustainable development goals in construction; achieving gender equality across all 17 sustainable development goals by closing gender gaps in knowledge and standards; developing the clean energy transition: innovation, case studies, and the applications towards an inclusive and sustainable planet, and so on. A 25th conference of the international environment forum (IEF) in partnership with Ethical Business Building the Future (EBBF) took place in Lisbon, Portugal in May 2021. The focus of this conference emphasized redefining success: a way to save the planet and ourselves (IEF, 2021). This suggests that environmental education is a prominent mechanism to save us (humans and our planet). Therefore, my view is centred on managing environmental education curriculum through distributed leadership in schools, because this might bring the nation together to work together to save our planet and manage our resources very well.

In rounding off, my discussion did not reflect on all the significant events that could be considered as having contributed to the understanding of environmental education as this is beyond the scope of this text. In addition to numerous significant developments that occurred globally in advancement of environmental education, various events of significance also occurred in Africa, particularly South Africa which, arguably, contributed to environmental education. In the next subsection I discuss the history and evolution of environmental education in the South African context.

3.5.1.1 The history and evolution of the concept of environmental education pre- and post-1994 in the South African context

Environmental education in South Africa has undergone a series of paradigm shifts (Irwin & Lotz-Sisitka, 2010). Irwin (1990) who some regard as one of the ‘founders’ of environmental education in South Africa states that the environmental education

movement was pioneered by non-governmental conservation agencies and state conservation agencies. This interest in environmental education started as early as the 1960s, but until 1989 there had not been a nationwide, state driven attempt to include environmental education into the formal curricula. The first attempt to include environmental education in the formal curriculum was the 1989 White Paper on Environmental Education (Mosidi, 1997).

The White paper's inclusion of the guidelines adopted at the international conferences held in Belgrade (1975) and Tbilisi (1977) was an encouraging shift from narrow interpretations of environmental education held up to this point (Mosidi, 1997). However, the White paper selectively incorporated Tbilisi principles and Clacherty (1994) points out that the White Paper was never enacted in parliament, was not broadly inclusive, resulting in little implementation in formal education. Peden (2006) states that the focus of environmental education was on the natural world with social and political issues generally excluded. In 1992, the Environmental Education Policy Initiative (EEPI) was started as a more inclusive process of gathering and developing environmental education policy options for formal education in South Africa. A significant outcome of this process was the inclusion of environmental education in what was then the most recent Government White Paper (March 1995) on education and training, as one of the key principles for Education and Training policy in South Africa in the 21st century. South Africa's first democratic election in 1994 necessitated imperatives for change and redress. In the period immediately following the elections, South Africa witnessed the emergence of a plethora of new policies, including policies on education and the environment.

In post-1994 South Africa, the right to a healthy environment was then enshrined in the Constitution, but environmental conservation was rejected in favour of "sustainable development of the environment" (DEAT, 1998). The DBE (1995) described environmental education as a vital element for all educational levels and programmes with the purpose of developing environmentally literate and active citizens. One of the principles of the National Curriculum Statements was environmental justice (DBE, 2003). Environmental education was introduced into the school curriculum as a theme to be included across all school subjects and not as a single subject (Verma & Dhull, 2017). This makes environmental education the responsibility of every teacher (Peden, 2006).

Accordingly, environmental education should not only be a responsibility of a teacher alone, but of all school stakeholders.

Current thinking in environmental education has shifted from educating learners about the environment i.e., giving them knowledge about the natural environment and educating learners in the environment (experiential learning in the natural environment) to a new approach: education for the environment (Fien, 1993) based on socially critical and constructivist paradigms oriented towards action for social change. In my view, environmental education is now more focused on the influence of learning for the environment. As much as learners may be informed about the challenges that are facing the environment, but the question remains about what action are they taking to preserve the environment. My argument is that, in social structures, people influence each other, and, in most cases, the youth learn from those who are older than them or who are more knowledgeable on the field or in the affairs of life.

In post-1994 South Africa, an array of conferences has contributed to our understanding of environmental education and the importance of integrating environmental education into the curriculum. EEASA can be credited with the status of environmental education in South Africa as they hosted many conferences of environmental education in South Africa. For the interest of this discussion, I saw it fit to discuss a few conferences that have contributed to the development of environmental education in the following section.

3.5.1.2 The conferences, events, and summits of environmental education

The World Summit on Sustainable Development (WSSD) (also called the Johannesburg Earth Summit) was held in Johannesburg, in 2002 where the role of education was emphasized as a response to issues of poverty, global inequalities, and the need for sustainable development in all societies (UN, 2002). In the same year, the United Nations General Assembly passed a resolution declaring 2005-2014 as the Decade of Education for Sustainable Development, and UNESCO was designated as a lead agency for the promotion of the decade (UNESCO, 2002).

In 2004, the 22nd Annual Conference of the Environmental Education Association of Southern Africa was organized by the Treverton Colleges in South Africa and had a

practical focus on how environmental educators can benefit from and contribute to the United Nations Decade of Education for Sustainable Development (2004-2015). This was a momentous event because EEASA was founded in Treverton. From 2002 - 2021 the EEASA has hosted conferences and events in different areas of the country to discuss the themes of environmental education and education for sustainable development and environmental crisis facing the planet.

Sauve (1996) mentioned that the shift from environmental education to education for sustainable development has even further confused the identity of environmental education and its placement in the curriculum. While most would argue that we need environmental education, many still argue about what is environmental education and where environmental education can fit into an already crowded curriculum. In his study, Hebe (2019) singles out the failure of the Curriculum Assessment Policy Statement documents to pinpoint the topics that could be used to facilitate the implementation of environmental education. This suggests that environmental education needs to be successfully managed through the adoption of strategies that allow all school stakeholders to work together, from the development of environmental curriculum, integration, and implementation. The discussion on the next section is based on curriculum management and the roles of each school stakeholders in the management of school curriculum.

3.6 THE CONCEPT OF SCHOOL CURRICULUM MANAGEMENT

The discussion of curriculum management in the following section should bring the reader to an understanding of concept of curriculum and management and what curriculum management entails.

3.6.1 Defining management and curriculum

Since curriculum management meanings are rare, the two terms are dealt with separately, but together they provide a perspective on the broad nature of curriculum management. Pretorius (1998, 54) describes management as "the process of working with and through individuals and groups to achieve coordinated goals. He also states that achieving the aims of a school through leadership is a product of the school management in which each member of staff has a role to play (Pretorius, 1998). Johnson and Scholes (2002, 44) clarify

that effective management is possible when managers can consider challenges or issues in their experiences.

3.6.2 Curriculum management definition

As asserted in the Mansfield Independent School District (MISD) curriculum management plan (2019), curriculum management is a dynamic process. Lister and Cameron (1986) mention that curriculum management is a process whereby quality control of the taught, written and assessed curriculum occurs which results in an improvement in learner achievement. According to Kirk (2014), curriculum management is the management of a subject matter, its creation, packaging, and implementation. Curriculum management includes planning, developing, monitoring, and reviewing the educational program of the school to ensure a match with school goals and the appropriate allocation of resources. It is the possession of comprehensive broad knowledge about curriculum policy and its management (Dimmock & Wildy, 1992, 7). Hogue (2010, 11) defines curriculum management as the management of the total program of formal studies offered by the school, resulting in an organizational plan and design of learning.

The purpose of curriculum management is to improve collaboration, articulation, and coordination across the system (MISD, 2019). Maringa (2016) states that another purpose of curriculum of management is the provision of an aligned, assessed, and articulated curriculum that serves as the basis for all learners to acquire knowledge, compete and succeed in this ever-changing world. The process of curriculum management is largely concerned with the effectiveness of teaching and learning in schools. This process entails the management of what is expected of learners to learn, checking whether learning took place, and attempting to find ways of improving the learning process of learners (Kurangi et al, 2017).

In the South African public school system, the management of the environmental education curriculum is not clear as there seem to be no environmental education specialists in the Department of Basic Education to track the environmental education curriculum in schools. For the school curriculum to have an impact on the results of students, it must be delivered appropriately, through an appropriate format, and the correct channels. Moreover, every learner must gain suitable skills and knowledge through the

progression and completion of their learning program. MISD (2019) points out that the curriculum management process consists of two major areas namely, curriculum development and assurance of learning. But for this research, I focused on curriculum development.

3.6.2.1 Curriculum development as an approach

Jacobs et al (2011, 33) define curriculum development as a set of plans for teaching and, therefore, the ability to prepare successful curricula is a critical skill for all teachers. "The development of curricula includes reviewing government-issued curriculum documents, determining priorities, collecting knowledge on subjects, identifying acceptable teaching methods, and choosing ways to measure learning" (Jacobs et al, 2011, 33).

According to Tyler (2013) curriculum development is a technical production operation. Therefore, technical problems that address curriculum creation as empirical, logical, and are guided by means-end reasoning or rational decision making, are of concern (Tyler, 2013, 61). Nevertheless, curriculum development is a method and is socially built (Stenhouse, 2012). Teachers are involved in developing a curriculum that takes contextual factors into account, rather than pre-specifying goals. In contrast, the development of curricula involves critical reflection, problem posing, and dialogue (Stenhouse, 2012). One way to develop a curriculum from a critical approach is to use themes that address social, economic, and/or political issues and use them critically to address hegemonic and ideological curriculum issues.

Such approaches to curriculum development accentuate the idea that curriculum reform is needed. A study in the discipline Geography, for example, has established the existence of an Environmental Education System for Sustainable Living for schools in South Africa (Cowrie, 1997). However, it was not clearly stated how this environmental education system for sustainable living for schools can be successfully managed. This research investigated the use of distributed leadership in environmental education pedagogy. Based on the findings of this research, I have developed a model of environmental education curriculum management which might be used to enable the application of distributed leadership to manage environmental education pedagogy. However, the model is not tested and still requires further research on testing it.

1. Curriculum development trends

Curriculum development in South Africa after 1994 is part of the national political process as was the case before 1994 (van Eeden, 2010). A Ministerial Review Committee constituted in 2000 made recommendations and this committee recommended a thorough reform of the curriculum with the key goal of making it more digestible with an all-inclusive, user-friendly approach.

The development of the curriculum is mainly found in a compilation of globally and nationally recognized opinions where phases are defined, such as initiation, preparation, growth, testing, implementation, and summative evaluation. Moku (2010) defines the creation of curricula as an umbrella and a continuing process in which structure and formal planning methods are strongly represented from concept to assessment. Curriculum creation consists of a variety of phases, curriculum design, curriculum distribution, curriculum implementation, and assessment of curriculums.

However, there is a final goal in the creation of curricula, that is, to create more effective education through a more accessible and meaningful curriculum. Carl (2005) defines curriculum development as a decision-making process and ongoing process that requires ongoing assessment to recognize and establish strong and weak points on an ongoing basis through constant feedback that leads to changes and improvements. However, the quality of the decision-making process can affect the quality of curriculum development.

The development of the curriculum begins when the curriculum is seen as an established curriculum. Sometimes, the current curricula are the starting point. The aim of curriculum creation, irrespective of level, is to make a difference to allow learners to achieve the goals and objectives of schools, society, and their own. Based on the above paragraph, it is the teacher's job to ensure that the learners achieve the goals of the schools and society as well as their own goals. In some studies, for example in Graham-Jolly (2003) a point is made that teachers must be equal partners in curriculum and content growth. The view presented by Graham-Jolly (2013) corresponds with the essence of distributed leadership. Accordingly, in this research, distributed and transformational leadership assumes that teachers should not only be curriculum disseminators in the classrooms but should also be active in the curriculum planning and development.

Teachers need to be key drivers of curriculum development as they interact with learners closely and they have the capabilities to identify any literature gaps, merging with the skills necessary for the development of students. Carl (2005) states that usually a teacher's role in curriculum management is implementing the curriculum, not really on the development of the curriculum. Teachers also use certain leadership styles in the execution of their duties in the classrooms during teaching and learning sessions. Therefore, distributive leadership, transformational leadership, and social constructivism can be implemented by all staff at school to advance the teaching of environmental education. During the construction of knowledge, a teacher must communicate with learners on several occasions and facilitation. Vygotsky's (1978) ideas form the fundamental principle upon which the philosophy of social constructivism is built. Social constructivism considers human learning and cognitive growth to be collective and communicative mechanisms by which information is exchanged and understandings in culturally established settings are built. Knowledge exchange is the development of the principles and the goals to be met. Therefore, all stakeholder engagement is important to successfully execute their roles when managing the environmental education curriculum.

2. Curriculum design

Curriculum design is a term used to describe the purposeful, deliberate, and systematic organization of curriculum (instructional blocks) within a course/subject (Schweitzer, 2019). All curriculum designs are structured to tackle four components of the curriculum, why we implement instruction or aim at what we can teach to realize our defined goals and objectives, how we can interconnect target learning experiences, what we have accomplished, and what steps we will take about the instructional program, learners, and teachers. While most curriculum designs contain these four components, because of the curriculum theory and model on which a design is based, they vary significantly in how they approach these elements (Mohanasundaram, 2018). Mohanasundaram (2018) further defines curriculum design as a planned educational activity that is the expressed in action of educational ideas.

In the context of this research, the process of curriculum design requires full potential from the leaders and their followers. This is where distributed leadership, transformational

leadership, and social constructivism form the base of curriculum design because all stakeholders need to comply with the distributed responsibilities and when carrying these roles they need to be transformed and adopt the same goals possessed by their leaders; through social constructivism, the followers need to learn from their seniors. When the curriculum is designed, those in leadership positions need to distribute roles to all followers so that there is equal share of roles in decision making

3. Curriculum dissemination

Curriculum dissemination is described as the process of informing teachers about new or revised ideas, documents, or materials in the curriculum to understand and embrace innovation (McBeath, 1997). Curriculum dissemination is a distribution of information to educate all the stakeholders for curriculum implementation. Curriculum dissemination takes place through the distribution of learning programs, instructional creation and distribution, guidance, study guides, and curriculum content development and production (textbook, etc.) (Carl, 2011). Curriculum dissemination is mostly handled by principals and teachers. Curriculum dissemination is necessary as this where school stakeholders get informed about any new developments in the curriculum. I believe curriculum dissemination is necessary for environmental education curriculum as it informs all school stakeholders. This means, if curriculum dissemination in the event of environmental education has successfully taken place, all school stakeholders should be well informed about environmental education in schools.

3.6.3 The management and implementation of the school curriculum in South Africa: Implications of distributed leadership in environmental education

In the context of this research, distributed leadership takes place during the distribution of roles by leaders to followers. The distributed leadership theory suggests that various stakeholders have a role to play in curriculum management and implementation. I believe that the stakeholders referred to are, subject advisors, school management teams (principals, deputy principals, and head of departments), teachers, and school governing body members. By extension, these stakeholders have a potential role to play in curriculum management, in general and environmental education curriculum. The transformation of mindset, goals, and values of the organization is important when roles are distributed

during curriculum dissemination. This process is guided by social constructivism where teachers learn from the more knowledgeable, in this case, I view principals, subject advisors, and SMTs as more knowledgeable others.

3.6.3.1 The role of subject advisors (district officials) in curriculum management

Subject advisors are professional office-based educators in a district office or circuit office who promote curriculum implementation and enhance the atmosphere and process of learning and teaching by visiting schools, communicating with, and advising school principals and teachers on curriculum matters (DBE, 2012). According to Mthembu (2014), subject advisors have a four-fold role, namely: to help school principals and teachers navigate the process of transition when a new curriculum is introduced; to train, monitor, and assist principals in supporting teachers through curriculum transition, to review the implementation of the new curriculum and to provide critical teaching and learning support to schools.

Apart from Mthembu (2014) and DBE (2013) numerous other scholars (e.g., Tatana, 2013; Mbanjwa, 2014; Rasebotsa, 2017; Mavuso, 2016) conducted studies that focused on the role of subject advisors. These studies, too, have implications for the management and implementation of environmental education in pedagogy. For example, in his research on the role of subject advisors in improving instructional leadership practices in schools, Tatana (2014) found that subject advisors' responsibilities include curriculum implementation and assisting teachers in subject matters, and in his study on how subject advisors and school management teams communicate curriculum changes in schools, Rasebotsa (2017) discovered that the task of subject advisors is to help teachers comprehend the curriculum and policy and track the work performed by teachers in schools. Therefore, this suggests that subject advisors should step in and provide clarity wherever the school principal, SMTs, SGBs, and teachers have difficulty understanding the substance and policy of the environmental education curriculum. Likewise, Mavuso (2016) conducted a study to investigate subject advisors' perspectives on their practices in promoting teaching and learning in South African schools. Mavuso (2016) found that subject advisors perceive support for teaching and learning as merely monitoring the progress in syllabus coverage.

Subject advisors sometimes identified areas where there are shortfalls and focused on how they can assist teachers to perform better in those areas (Mavuso, 2016). Mavuso (2016) recommends that subject advisors should have pre-session with teachers to create a cohesive support program together. The implications of the findings by Mavuso (2016) that subject advisors merely track the progress of syllabus coverage suggest that subject advisors need to reinforce distributed leadership, supervise teaching and learning, and track learner success in the management of and the implementation of the curriculum, including environmental education curriculum. The points presented by the DBE (2013); Mthembu (2014); Tatana (2014); Mbanjwa (2014); Rasebotsa (2017); and Mavuso (2016) regarding the roles of subject advisors advocate for the management of environmental education by subject advisors.

3.6.3.2 The role of the school management teams in curriculum management

Principals, deputy principals, heads of departments (HODs), teachers, and non-teaching staff are among the members of the SMT (Mandukwini, 2016). The general responsibilities of SMT members are defined by the Personnel Administrative Measures (PAM) document that was published by the Minister of Basic Education (2016), which specifies the roles of various members of the SMT. Because the duties of teachers and SGBs will be explored later in this discussion, the next point focuses on principals, deputy principals, and HODs in this section.

The SMT oversees curriculum management and the quality of teaching and learning (Subramoney, 2016). Subramoney (2016) goes on to say that the members of the SMT oversee managing the school's activities daily. Therefore, to successfully discharge their tasks in terms of environmental curriculum management, the SMT must ensure that the curriculum is covered, and that learner performance is improved because of the successful curriculum implementation in schools (Labane, 2009). This suggests that the SMTs are expected to completely comprehend the departmental policies, acts, and processes of environmental education integration and execution to help them discharge their tasks in terms of environmental education curriculum management.

Subramoney (2016) avers that subject advisors, principals, and the members of the SMT must also monitor whether teachers have covered all the topics indicated in the curriculum

materials before testing students on the work they have completed. Accordingly, the SMT is supposed to oversee ensuring that environmental issues are taught, and teachers are well-versed in how these topics should be integrated into the existing curriculum of the other disciplines. For example, they should make sure that all resources for the lessons are available, such as projectors, digital tools, and other technologies that could assist teachers in the classroom in teaching environmental issues without having to take learners outside. This may make it easier to adjust to the new normal (COVID-19 restrictions).

3.6.3.3 The role of the teacher in curriculum management

The teacher's primary responsibility in a classroom should be to plan, implement, assess, and manage the curriculum. According to authors such as Du Plessis (2005) and Alsubaie (2016), curriculum development and curriculum management are linked. This suggests that curriculum development is an element of curriculum management. The teacher's involvement might range from classroom curriculum development through school, district, and even province curriculum development (Carl, 2005).

According to Du Plessis (2005), designing a curriculum requires a significant number of stakeholders from both the school and the community. I agree with Du Plessis (2005) that curriculum development cannot be the duty of one person and that many stakeholders, including environmental education curriculum managers must successfully work together. In the construction of the curriculum, the teacher plays a crucial role (Alsubaie, 2016). The teacher determines which components of the curriculum to use in a specific lesson, whether they are new or ongoing (Alsubaie, 2016). The teacher also decides how much time to devote to developing fundamental abilities or critical thinking skills (Du Plessis, 2005).

Through the review of literature, I discovered that there is a paucity of literature on the function of the teacher in curriculum management, because managing curriculum is not "actually" considering a teacher's role. Curriculum management is also known as curriculum development and implementation in other studies. This shows that, as discussed in the preceding section on curriculum management in 3.6.1, a process of curriculum management entails curriculum development, dissemination, and evaluation

(Kirk, 2014). Teachers are thought to oversee curriculum development and implementation which is not the whole process of curriculum management.

3.6.3.4 The role of school governing bodies in curriculum management

In monitoring and overseeing the implementation of the curriculum in the school and ensuring that it is not disconnected from the school's goals, the school governing body represents the interests of ordinary community members, parents, teachers, and learners (Quan-Baffour, 2006). According to Mahlangu (2008), the SGBs have the authority to tell teachers or principals how to educate their students, but they must appear to be interested in the content of the curriculum and ensure that the requirements are met. Thus, the governing body's role in the realm of the curriculum is to monitor standards, support plans for curriculum growth, and cater too and meet the demands and expectations of parents regarding how the school should teach their children (Quan-Baffour, 2006).

Parents, teachers, the community, the state, and the corporate sector must all play a key role in determining how students should be prepared for adult life, including the workplace (Gauteng Department of Education, 1997). All parties must collaborate for the success of the schools. The participation of SGBs in curriculum management is critical because SGBs are active members of the school community and are expected to be involved in curriculum management. Because the SGBs are made up of teachers and parents, they may help in the management of environmental education curriculum because environmental education learning and teaching can take place in formal, informal, and non-formal settings where parents and teachers interact with learners.

3.6.3.5 Synthesis: the implications for the management and implementation of environmental education

Based on the arguments raised above, it is evident that the inclusion of all key stakeholders in school curriculum management is essential as it might enable the infusion and appropriate management of environmental education curriculum in pedagogy. Therefore, the inclusion of stakeholders (through distributed leadership) might be successful to encourage participation and inclusion for all stakeholders which has the advantage of being socially diverse as advocated by social constructivism in curriculum transformation,

management, and implementation. Social constructivism promotes social engagement and acceptance of the already constructed of knowledge of all stakeholders concerning the management of environmental education curriculum.

This suggests that the ideas of all stakeholders can help to bring about better and varied ways to include and manage environmental education curriculum in pedagogy. Therefore, I contend that the process of curriculum management and implementation, especially environmental education curriculum, requires the accommodation of transformative distributed leadership and constructivism, all of which advocate for the involvement of all relevant stakeholders.

3.7 THE SUSTAINABLE DEVELOPMENT GOALS: THEIR SIGNIFICANCE IN THE ENVIRONMENTAL EDUCATION CURRICULUM

3.7.1 The sustainable development goals

According to Boeren (2019), the United Nations Sustainable Development Goals (SDGs) are not the first set of goals aimed at assisting nations in working together to build a cleaner world and a more equal global society. The Millennium Development Goals (MDGs) of the previous agenda that were established in 2000 also aimed at assisting nations in working together to have a just society (Boeren, 2019). The Sustainable Development Goals, also known as the Global Goals are a set of 17 interconnected global goals that are intended to serve as a "blueprint for achieving a better and more sustainable future for all" (UN, 2015).

According to the United Nations (2015), the sustainable development goals outline the future we want to live in. These goals are expected to be realized by 2030. The Sustainable Development Goals are a call for action for all countries, rich and poor, to work together to achieve prosperity while safeguarding the environment (Mensah, 2019). They acknowledge that eradicating poverty requires methods that promote economic growth and fulfil a variety of social needs such as education, health, social protection, and job opportunities, while combating climate change and protecting the environment (UN,

2015). As stated by the United Nations (2015), the 17 sustainable development goals involve the points mentioned in Table 3.1 below.

Table 0.1: The major components of the environment (Coman & Cioruta, 2019)

Sustainable development goals	Meaning
1. No poverty	Eradicating poverty in all its forms remains one of the greatest challenges facing humanity.
2. Zero hunger	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.
3. Good health and well-being	Ensure healthy lives and promote well-being for all at all ages.
4. Quality education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
5. Gender equality	Achieve gender equality and empower all women and girls.
6. Clean water and sanitation	Ensure availability and sustainable management of water and sanitation for all.
7. Affordable and clean energy	Ensure access to affordable, reliable, sustainable, and modern energy for all.

8. Decent work and economic growth	Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.
9. Industry, innovation, and infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.
10. Reduce inequalities	Reduce inequality within and among countries.
11. Sustainable cities and communities	Make cities and human settlements inclusive, safe, resilient, and sustainable.
12. Responsible consumption and production	Ensure sustainable consumption and production patterns.
13. Climate action	Take urgent action to combat climate change and its impacts
14. Life below water	Conserve and sustainably use the oceans, seas, and marine resources for sustainable development
15. Life on land	Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse degradation and halt biodiversity loss.

16. Peace, justice, and strong institutions	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels.
17. Partnerships for the goals	Strengthen the means of implementation and revitalize the global partnership for sustainable development.

3.7.2 The role of education in sustainable development

Education of high quality is a critical tool for attaining a more sustainable future (Nevin, 2008). According to Nevin (2008), this was stressed during the United Nations World Summit in Johannesburg in 2002, where the reorientation of current educational systems was outlined as critical to long-term growth. Education for sustainable development (ESD) facilitates the development of the knowledge, skills, understanding, values, and actions necessary to build a world that protects and conserves the environment, promotes social fairness, and stimulates economic sustainability (UNESCO, 2021).

Environmental education, which aims to increase people's knowledge, skills, values, attitudes, and behaviours to care for their environment influenced the development of ESD. The main goal of ESD is to empower individuals to make decisions and take activities that improve our quality of life while also protecting the environment (Yadav, 2016). ESD also strives to integrate the ideals inherent in sustainable development with all elements and levels of learning (Yadav, 2016). While the primary focus is on environmental issues, ESD also covers topics such as poverty reduction, citizenship, peace, ethics, responsibility in local and global contexts, democracy and governance, justice, human rights, gender equality, corporate responsibility, natural resource management, and biological diversity (Nayar, 2013). Certain features are widely

acknowledged as essential for the successful implementation of ESD, indicating the equal relevance of both educational outcomes (Nevin, 2008).

3.7.3 The significance of sustainable development goals in environmental education curriculum

Education allows us to get a better understanding of ourselves and others, as well as our connections to the larger natural and social environment (Reilly, 2008). ESD strives to propel us forward through adopting behaviours and practices that will help us all to live a full existence without being deprived of essential human needs. ESD creates a sense of justice, responsibility, discovery, and communication (UN, 2015). Environmental education is more than just a program that teaches us about the natural world and how ecosystems work, it's a process of recognizing values and clarifying concepts to develop the skills and attitudes needed to comprehend and appreciate man's interconnectedness with his culture and biophysical surroundings (Nevin, 2008). Environmental education is not a course of study, but rather a lifetime activity that is integrated into a variety of disciplines (Nevin, 2008). According to the IUCN (1970, 17), environmental education should be viewed from a multidisciplinary perspective. The IUCN (1970) further states that environmental education can be thought of as having three linked components:



Figure 0.2: Components of environmental education (IUCN, 1970)

(a) Education about the environment is concerned with the advancement of knowledge. The environment is regarded as a research topic (Erhabor & Don, 2016).

(b) Education for the environment emphasizes the importance of instilling ideas to foster pro-environmental awareness. As a result, attitudes develop that foster responsibility for living a sustainable lifestyle (Gough & Gough, 2010).

(c) Education through the environment: entails using the environment as a learning medium. As a foundation for inquiry learning, the environment can enrich real-life scenarios (Erhabor & Don, 2016).

While environmental education is a well-established discipline that focuses on humankind's relationship with the natural environment and ways to conserve and preserve it while properly stewarding its resources, ESD encompasses environmental education while also placing it in the larger context of socio-cultural factors and socio-political issues such as equity, poverty, democracy, and quality of life (De Sousa et al, 2017). Environment education and SDG 4 work together to ensure that all children receive a high-quality education and that lifelong learning opportunities are available to them (Mishra, 2018). Mishra (2018) further states that ensuring universal access to high-quality

education reaffirms the opinion that education is one of the most important and proven drivers for sustainable development.

The United Nations (2015) states that this goal (SGD 4) has 10 strategies such as ensuring that all girls and boys complete free primary and secondary schooling by 2030, providing equal access to affordable vocational training, and eliminating gender and wealth disparities to achieve universal access to a quality higher education, ensuring all learners acquire knowledge and skills needed to promote sustainable development, including education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and nonviolence, global citizenship and appreciation of cultural diversity.

Because education and human resource development are so important to achieving the SDGs, all aspects of education, such as education for sustainable development, environmental education, peace education, vocational education, higher education, and so on, must be available to everyone from all walks of life (Mishra, 2018). Environment education and Education for Sustainable Development (ESD) are two distinct but inevitably intertwined fields of study that without a doubt deal directly with environmental conservation and protection (Schrage, 2015).

Accordingly, it is my view that the management of environmental education which encapsulates the use of distributed leadership, transformation, multi-stakeholder participation could help promote education that focuses on sustainable development and critical thinking. Environmental education's multidisciplinary nature makes it an appropriate development strategy. Environmental education in the developing world frequently has distinct success criteria due to socioeconomic factors affecting communities. As a result, multi-stakeholder participation is critical for managing the environmental education curriculum because socioeconomic factors affect everyone and it is the same people that must take action to preserve them. To improve the effectiveness of environmental education and sustainable development, it is critical to connect the concepts of environmental quality, human equality, and human rights for sustainability.

3.8 SUMMARY OF THE CHAPTER

In this chapter, the review of literature deemed pertinent to this research explored the concept of environmental education and the importance of environmental education integration in pedagogy. Models of environmental education integration such as the integrative approach, MOTORIC model and so on and the history of environmental education evolution were reviewed. Again, the concept of school curriculum management, curriculum assessment policy statement, and environmental education was explored. In rounding off the discussion, the sustainable development goals and their significance in the environmental education curriculum were reviewed to support the arguments of the researcher.

4. SCIENTIFIC ENQUIRY METHODS

*“Iron rusts from disuse, stagnant water loses its purity, and in cold weather becomes frozen,
and even so does inaction sap the vigour of the man”*

Leonardo Da Vinci.

4.1 INTRODUCTION

To me Leonardo’s quote relates to the sense of unused knowledge becoming ineffective because it is important to be practical after acquiring knowledge (Vinci, n.d). If practicality lacks, people tend to forget what they have learnt. This quote serves as a core of this research, putting knowledge into practice. The previous chapter focused on the review of literature on the extent and use of distributed leadership in secondary schools. However, literature revealed that there is dearth of knowledge regarding the use of distributed leadership to manage environmental education (EE) curriculum in secondary schools.

The current chapter presents the research methodology of the research broadly. A number of aspects that falls under the research methodology are the research paradigm that was adopted by this research to interpret the data collected, a research approach which was used as a data collection and analysis method, research design that was used to collect data, the data collection procedures that were used in this research, the population that was sampled and the sampling method of this research, the data collection methods that were used to collect raw data from the field, how data was analysed and interpreted, how the pilot study was conducted, the ethical considerations that the research adhered to and how the trustworthiness of the results was maintained.

4.2 RESEARCH METHODOLOGY

A research methodology is a framework of techniques to be used in the study of analysis (Igwenagu, 2016). Such sets of techniques have directed how this research have been carried out. Other scholars indicate that the methods identified and analysed in this section shed more light on the resources and limitations available, provide clarity on the pre-suppositions and

consequences and related potential of the study's success (Kumar, 2011; Kothari, 2004; Langos, 2014). Kothari (2004) mentions that a research methodology is a method for systematically solving a research problem. Readers review the steps taken by a researcher to solve the research problem or to suggest ways in which the research problem can be solved. The reasoning behind it is attached to the research methodology (Kothari, 2004). In my view, a research methodology is a systematically structure that guides the research enquiry, this involves the methods used, data collection tools, how participants are selected and sample, how data is analysed and presented all is structured research methodology.

However, Igwenagu (2016) stated that the research methodology has some benefits.

4.2.1 Benefits of research methodology

Provides methods for the conduct of research.

The creation of disciplined mindsets, science and critical attitudes.

An opportunity for in-depth information is given in a study subject and the analysis process is enriched.

Evaluation skills, rational faith in decision-making and the use of consequences, the ability to think critically and learn to read are inculcated.

The research methodology of this research guided the process of this whole research, from how this research was conducted and to explain how the data collected was managed, analysed, and interpreted. The Table (4.1) below illustrates the methods used to carry out this research.

Table 0.1: Research methods of this research

Number	Research Methods
1.	Research paradigm (Constructivism research paradigm)
2.	Research approach (Qualitative research approach)
3.	Research design (Descriptive design/ case study)
4.	Population and sampling (Non-probability/ purposive sampling)

5.	Data collection procedure
6.	Data collection methods (Individual interview/semi-structured, document analysis and observations)
7.	Data analysis methods and interpretation (Thematic analysis)
8.	Ethical considerations
9.	Quality assurance of data

4.3 RESEARCH PARADIGM

Two terms, namely, research and paradigm make up the term research paradigm. Shah and Al-Bargi (2013) state that research is known to be the phase of systems and techniques used to analyse a phenomenon, answer questions and solve problems. In support, according to my own understanding, research is a systematic investigative method for acquiring and obtaining information about the subject of interest. It is also possible to characterize research as a framework of efforts to learn new ideas and information (Kivunja & Kuyini, 2017). Kivunja and Kuyini (2017) further note that the term paradigm typically interprets how the environment is perceived by the researcher. Overall, the way researchers perceive the world in which they live or in which they want to live is defined by a paradigm (Kivunja & Kuyini, 2017). In my opinion, a paradigm is a set of beliefs about the world and their surroundings. What they perceive as being true or untrue is their own version of how they see the world and their interaction is based on those beliefs.

According to my own understanding, a research paradigm is a set of opinions that guided how the truth or reality was acquired about the subject of the current research. On the same note, Guba (1990) defined a research paradigm as a collection of beliefs that direct action. Fraser and Robinson (2004) endorse the declaration of Guba by arguing that a study model is a collection of assumptions about the way specific problems arise and a collection of agreements about how to examine those problems. In agreement with Guba (2010) and Fraser and Robinson, (2004); Perera (2018) mentions that a research paradigm is a set of mutual agreements and common beliefs between scientists or researchers about the understanding and

ways of approaching an issue. However, Rehman and Alharthi (2016) believes that a research paradigm is a belief in the essence of truth what i.e., what can be understood and how this understanding can be accomplished. In support, Hughes (2010) describes a research paradigm as a perceived way of seeing the world that frames a research topic and influences the way researchers think about the subject. I agree with the above authors, but my focus is based more on Hughes's view on research paradigm being a perceived way of seeing the world that frames a research topic. From my own perspective, a researcher views the world and in his/her mind develops a belief of how things should be or should be done and develops curiosity to investigate the phenomenon further. Perera (2018) notes that it is possible to consider a research paradigm as a standard example or model of a study. Worldviews, cultural themes, mindsets, and philosophies can be included in these trends (Perera, 2018). I concur with the above-mentioned authors on the description of a research paradigm. As literature points out, a research paradigm is a framework that hypes a researcher's interest in how people come to socially agree or disagree about what is real and true. Additionally, a research paradigm can be used as a mechanism to determine whether what we perceive as true is real or not. Therefore, in this current research, a research paradigm was used to determine whether what we believe about environmental education curriculum management is true or not. A research paradigm, in essence, reflects the views and values of researchers regarding the universe, the way they interpret the world and the way they function inside the world (Kamal, 2019). In my view, the thoughts and beliefs of the researcher regarding any problems discussed will then direct their behaviour in relation to research. In other words, the model adopted guides the investigation of researchers which involves procedures for data collection and analysis (Kamal, 2019). Therefore, for any decision taken in the research process, a paradigm has significant consequences (Kivunja & Kuyini, 2017). There are different types of research paradigms that shapes research.

4.3.1 Different Types of Research Paradigms

There are different types of research paradigms which are meant for each research approach as discussed below.

4.3.1.1 Realism

Realism is the first research paradigm to be discussed. For certain social scientists, realism is a worldview that is increasingly useful. Indeed, in management research it is a growing trend

changing the intellectual scene (Sobh & Perry, 2006). Dudovski (2018) describes realism as research paradigm that relies on the idea of independence of reality from the human mind. Dudovski perceives a realism as not based on human experience or how they perceive the world or situations. Dudovski (2018) further states that a realism is an assumption of a scientific approach to the development of knowledge. Sobh and Perry (2006) support Dudovski by claiming that truth is only imperfectly and probabilistically apprehensible in realism and so it is important to triangulate from many sources to try understanding it. Julnes (2015) argues that realists refer to reality as all things (forces, structures, etc.) that trigger the phenomena that we experience through our senses in the universe. In support, Stein (2015) states that realism is a theory that views the world as it is, and not in terms of an unrealized ideal. Alternatively, I agree with Julnes's view that realism is based on how we experience the natural environment in which we are placed and how we make sense of it. My view indicates that different people may have different experiences of the same situation.

Sobh and Perry (2006) state that realism refers to the external world as consisting of systems and processes by which these objects interact, which are themselves collections of interrelated objects. In corroboration, Riege (2003) affirms that realists consider variations between the real world and their own perception of it and seek to create different perceptions of the fact in terms of which time and location are subjective. However, realism is a research paradigm largely used in a mixed research approach as it may approach one problem in two different ways and give results that may either differ or support each other. For the current research, the realism research paradigm could not be implemented as it could not serve the purpose of the current research because I adopted one research approach.

4.3.1.2 Positivism

Rehman and Alharthi (2016) note that positivism believes that reality exists independently of us, it is not influenced by our senses and it is regulated by immutable rules. Positivists, like the natural world, strive to understand the world (Rehman & Alharthi, 2016). In positivism, truth is true and apprehensible. A researcher is analytical and prefers to perceive truth through a one-way mirror (Sobh & Perry, 2006). Comprehension of phenomena in fact must be measured and confirmed by proof (Hammersley, 2013). In my view, positivism is a research paradigm that is based on one perspective, it does not involve different approaches to examine a phenomenon.

Positivist researchers may appear as researchers who believe that their results or arguments are true and cannot be challenged.

To explain the relationship between an independent variable and one or more dependent variables within the phase of testing the phenomenon, causal inferences will be discovered as the outcomes of experimental designs that are determined by how researchers optimize the effect of the independent variable on the dependent variable (Cohen et al, 2011). Alternatively, through observational experiments and techniques such as sampling, calculations, questionnaire, focus group discussions, this paradigm helps positivist researchers clearly understand the items. This means that positivist researchers' insights may have a high-quality level of validity and reliability and may be extended to the large population scale (Cohen, 2007; Johnson & Onwuegbuzie, 2004). Usually this paradigm is used in quantitative research. This research paradigm was not followed as I opted to sample a limited population and my focus was based on different perspectives and interpretation of the phenomenon.

4.3.1.3 Constructivism

Sobh and Perry (2006) view constructivism as multiple constructed realities that are local and unique. In support, my view is that a constructivism research paradigm is based on the interpretation of the constructed knowledge, assimilation, and experience of a researcher about the world and/or phenomenon they are actively participating in. In constructivism, a researcher creates results as he/she is an active participant in the universe being investigated (Sobh & Perry, 2006). The paradigm of constructivism is considered naturalistic and interpretive (Merriam & Tisdell, 2016). Guba and Lincoln (1989) note that the central point of the paradigm of constructivism is to grasp the world of human experience. This approach allows one to get into the mind of the participants being examined, and to understand and perceive what the participant is about or the meaning of the context (Kivunja & Kuyini, 2017). Kivunja and Kuyini (2017) further note that the purpose of making every effort is to ensure that the point of view of the participant observed is understood separately from the point of view of the observer. Based on my understanding, constructivism placed emphasis on the perception and analysis of the universe by individuals.

Truth is socially built within the framework of constructivism (Bogdan & Biklen, 1998). A subjectivist epistemology, a relativist ontology, a naturalist methodology and a balanced

axiology are assumed by this model (Kivunja & Kuyini, 2017). The presumption of a subjectivist epistemology assumes that through their own reasoning and cognitive analysis of data guided by their experiences with participants, the researcher makes sense of their data (Kivunja & Kuyini, 2017). There is the understanding that as a result of his or her personal experiences of real life within the natural settings studied the researcher can create social awareness (Punch, 2005). The researchers and their participants are assumed to be engaged in collaborative processes in which they intermingle, communicate, ask, listen, read, write, and document research information (Kivunja & Kuyini, 2017).

My view is that constructivism is further centred on the interactions between a researcher and the participants to understand their point of view or experiences about a certain phenomenon. However, this research followed a constructivism research paradigm. Before explaining the reason as to why I followed this paradigm, I would like to discuss the elements that drive each research paradigm and then explain my reasons for the applicability of the constructivism research approach. To explore the review, the research problem, each research paradigm is driven by four elements, namely, an ontology that is considered to be a fact, epistemology that is a link between fact and the researcher, and methodology that is a process that a researcher follows to obtain certain truth (Sobh & Perry, 2006). Finally, axiology applies to all ethical concerns that a researcher must be conscious of while preparing a study (Kivunja & Kuyini, 2017).

4.3.2 Elements of a Research Paradigm

These elements are a step guide to how a researcher acquires knowledge of the research or community of individuals to whom the research is intended.

4.3.2.1 Ontology

The essence of our assumptions about reality is alluded to in ontology (Rehman & Alharthi, 2016). Ontology is a metaphysical branch that deals with the assumptions we make when we assume that something is true or that something makes sense (Ahmed, 2008). Scott and Usher (2004) note that ontology is so important to a paradigm because it helps to provide an interpretation. Ontology attempts to explain the nature or truth of becoming or being as well as the essential categories and relationships of things that exist (Levers, 2013). In agreement with Scott and Usher's view, my view lies on ontology being concerned with a researcher's

ways of understanding the truth of the phenomena and how things came into being. In this research, I was interested in knowing how school stakeholders interpret distributed leadership strategies towards the management of environmental education curriculum in secondary schools.

4.3.2.2 Epistemology

Rehman, and Alharthi (2016) states that, epistemology is the transfer of knowledge and how we come to know whether it is fact or the truth. Zukauskas et al (2018) mention that epistemology is the essence of knowledge, how knowledge is gained and how it is conveyed to other individuals. In corroboration with Rehman and Alharthi (2016) and Zukauskas et al (2018), my view is that epistemology means gaining knowledge of a phenomenon through a researcher's worldview. Because of the importance of the epistemology, I adopted its use to help me develop trust with the participants. The epistemology also influenced how information was discovered in the social context. Again, in this research, I viewed all the information provided by participants as the truth because it came from primary sources. This included people who are in position to manage environmental education curriculum through distributed leadership and the ones familiar with the management of school curriculum.

4.3.2.3 Methodology

This is the general term used to refer to the approach of analysis, design, methods, and procedures used to find something in a study (Rehman & Alharthi, 2016). In agreement, Levers (2013) state that a methodology directs a researcher to choose what research to perform, the methods of data collection that are suitable for the research, and the issue of methodology leads the researcher to ask how to study the world. Through the reviewing of literature, I view a methodology as a process involving the intended collection of data, the participants to be used as data sources, the methods used to collect data and data analysis. According to my knowledge, a methodology is the process of all the required steps that I had to take to undertake this research and the procedures to collect rich data, analyse it and ensure that it is correctly interpreted.

4.3.2.4 Axiology

Literature suggests that when preparing a research, axiology refers to ethical concerns that need to be addressed (Rehman & Alharthi, 2016; Kivunja & Kuyini, 2017). Rehman and Alharthi (2016) state that axiology considers the importance of decisions or the correct choices. Kivunja and Kuyini (2017) corroborated with Rehman and Alharthi (2016) by stating that axiology considers the importance the researcher assigned to the various aspects of analysis, participants, data, and audience in which the results of this research will be published. It is my view that, this axiology includes identifying, analysing, and interpreting research-related principles of right or wrong behaviour.

My overall view of the four elements is that the presumption of a relativistic ontology implies that you assume that there are many realities in the situation examined and that these realities can be explored and meaning generated or reconstructed by human experiences between the researcher and the research participants (Chalmers et al, 2005). The researcher uses data obtained through interviews, speeches, text messages and reflective sessions while assuming a naturalistic approach (Bisman & Highfield, 2012). A balanced axiology assumes that the research outcome will reflect the researcher's principles, seeking to provide a balanced report of the results. In a qualitative research sample, the constructivism research paradigm is mainly used.

The use of the epistemological constructivism research paradigm was utilized in this analysis. In my view, people cannot be isolated from their environment. Therefore, the use of epistemological constructivism enabled me to understand and interpret the values and information that principals, SMTs, and teachers have about environmental education management in schools. I had to engage with the participants to create data on the cases being examined. Engagement in terms of interviews and observations was necessary.

To sum up, based on my own understanding of the content, a research paradigm is important because it allows a researcher to understand the answers to their research questions. In this way, the answers to the research questions can be resolved in a systematic way where a researcher can tell the readers how his/her research has been carried out. It is necessary for a researcher to provide readers with step-by-step instructions on how research was carried out and how the researcher obtained the answers to the research questions. A research paradigm

gives the researcher a guide to follow during the research. In corroboration, Kamal (2019) state that the beliefs and values of the researcher about the world are presented through paradigms. Readers should understand what researchers see as facts, truth, and methods that they use through paradigms to discover the truth. Paradigms, above all, shape the research to take form and direction.

When you are conducting a research study, in my view, it is important to choose an appropriate research approach explaining which type of a research your study falls under. In the following section is a discussion on research approaches that each researcher may explore.

4.4 RESEARCH APPROACH

According to my knowledge, a research approach is a strategic process aimed at examining research problems and involves collecting and analysing data. First the researcher, looks at the nature of his/her research and then decides which type of research approach would best explain what he/she aims to find or achieve with their research. In this context, Creswell (2002) describes a research approach as a consistency survey for data collection. In support, Leedy and Ormord (2013) characterize a research approach as a method of data collection and analysis. Creswell (2009) and Mohajan (2017) note that a research approach is a plan of action that provides guidance for the systematic and efficient conducting of research. Furthermore, Creswell (2009) asserts that a research approach is an important technique to speed up the validity of a sample. In a research study, a research approach is important because it frames the research, giving guidance to how a project should be carried out (Mohajan, 2017). If a research approach is wrong, the research project may not make sense because of the inappropriate way it was conducted. There are different types of research approaches that may be used by a researcher, as will be discussed in this section.

4.4.1 Different types of Research Approaches

Grover (2015) reports that three research approaches are used to prepare and perform research, namely the mixed, quantitative and qualitative approach.

4.4.1.1 Mixed method research approach

Williams (2007) describes a mixed method approach as a technique that researchers use in a single research study to integrate methods of gathering or analysing data from quantitative and qualitative research approaches. In my view, a mixed research approach is an approach that encompasses qualitative and quantitative techniques to collect and analyse data. A mixed method approach includes the processing of qualitative and quantitative data, the incorporation of the two data sources, and the use of different designs that may include conceptual assumptions and theoretical frameworks (Grover, 2015). Cameron (2014) note that using a mixed approach helps a researcher not only to collect and analyse numerical data that is standard for quantitative study, but also helps to collect narrative data that is the norm for qualitative research, thus ensuring a mixture of data is collected. I agree with Grover (2015) and Cameron (2014), in my perspective, a mixed research approach allows a researcher to approach a single research problem in two different ways to find data that complements or challenges each other. A mixed research approach is said to have characteristics, advantages, and disadvantages.

1. Characteristics of mixed method research approach

According to Graff (n.d.), the characteristics of a mixed research approach are as follows:

- Collects and analyses persuasively and rigorously both qualitative and quantitative data (based on research questions).
- Mixes (or integrates or links) the two forms of data concurrently by combining them (or merging) by having one build on the other sequentially or by embedding one within the other.
- Gives priority to one or to both forms of data (in terms of what the research emphasizes)
- Uses these procedures in a single study or in multiple phases of a program of study.
- Frames these procedures within philosophical worldviews and theoretical lenses.
- Combines the procedures into specific research designs that directs the plan for conducting the study.

2. Advantages and disadvantages of the application of a mixed method research

According to Malina et al (2010) and Regnault et al (2018) state that the application of a mixed method research has advantages and disadvantages discussed below

A. Advantages

Malina, et al. (2010) state that a major advantage of mixed method research approach is that during the project, a researcher can return to the qualitative data and reread quotes in context of the larger document. Multiple runs of statistical analysis could be made on qualitative data until confirming evidence is found however, non-results or obvious data-mining exercises are unlikely to be published (Malina, et.al, 2010). In support, Regnault et al. (2018) state that the advantages of using a mixed research approach involves the analysis of both qualitative and quantitative results. In my view, recognizing inconsistencies between quantitative and qualitative results make mixed method approaches particularly useful. Mixed approaches give research participants a voice and ensure that study results are grounded in the experiences of participants (Regnault, et.al, 2018).

B. Disadvantages

Studies of mixed methods are difficult to implement, especially when they are used to assess complex interventions (Hafsa, 2019). Zou et al (2014) state that to explain all aspects of analysis, they need careful preparation including the study sample for qualitative and quantitative portions (identical, embedded, or parallel), timing (qualitative and quantitative portion sequence) and the data integration plan. For several researchers, combining qualitative and quantitative data during the study is often a challenging process (Wisdom et al, 2012). It can be difficult in many settings to find qualitative experts who are also comfortable with presenting quantitative assessments and vice versa.

Given that each method must comply with its own rigour requirements, it can be difficult to ensure adequate quality of each portion of a study of mixed methods (Wisdom et al, 2012). Finally, studies with mixed methods are labour intensive and take more resources and time than those that are necessary for a single method analysis. Therefore, this study did not adopt a mixed method because the purpose of the research was to explore and interpret the strategies applied by leaders to manage environmental education curriculum.

4.4.1.2 Quantitative research approach

In my view, a quantitative research approach is a method that produces numerical data. Grover (2015) describes quantitative research as a method that tests objective hypotheses to analyse the relationship between variables. Apuke (2017) supports Grover's argument by explaining that to get results, a quantitative analysis approach deals with quantifying and evaluating variables. To answer questions such as who, how much, when, where, how many, and how includes the use and study of numerical data using various statistical techniques.

1. Characteristics of a quantitative research

Apuke (2017) states that quantitative research has characteristics as discussed below:

- The knowledge is typically obtained using organized analysis methods.
- The findings are focused on broader sample sizes that are population representative.
- The research analysis, given its high reliability can normally be replicated or repeated.
- Researchers have a well identified research issue to which they are searching for empirical answers.
- Until data is gathered, all aspects of the analysis are carefully planned.
- Data is also organised in tables, maps, percentages or other non-textual types in the form of numbers and statistics.
- The research can be used to generalise ideas more broadly, to forecast future outcomes or to examine causal relationships.
- Researchers use methods to gather numerical data such as questionnaires or computer software.

Different researchers have discussed the advantages and disadvantages of using a quantitative research approach and these advantages and disadvantages are discussed below.

2. Advantages, disadvantages, and application of quantitative research

A. Advantages

The benefits of a quantitative analysis include results that are likely to be applied to a whole population or a sub-population because the broader randomly selected sample is used (Carr, 1994). In addition to sampling, as it uses statistical tools such as SPSS, data processing is less time-consuming (Connolly, 2007). Powers and Powers (2015) note that it helps to make the research trustworthy by sampling a greater proportion of the population. Kauber (1986) points out that the positivist model of calculating variables is extended to quantitative analyses. In my view, this means that the results are not generalized from the contexts of a few participants sampled.

B. Disadvantages

Given the benefits described above, there are also drawbacks to quantitative research. The research paradigm of positivism leaves out the social phenomenon's common meanings (Denzin & Lincoln, 1998). As far as I know, quantitative research also fails to establish more profound fundamental definitions and interpretations as it is based on numerical data. Another downside to quantitative studies is that positivism does not account for the shaping and preservation to social reality or how people perceive their behaviour and others (Blaikie, 2007).

However, a quantitative research approach was not utilized in this research because it aims to interpret human behaviour and create solutions that may be implemented.

Another research approach that researchers may explore when planning to conduct research is a qualitative research approach.

4.4.1.3 Qualitative Research Approach

Asper and Corte (2019) state that in the real world, qualitative research is carried out and the analysis can be carried out in its fullness. I concur with Asper and Corte (2019), a qualitative research approach is a method that allows a researcher to study human behaviour, experiences and the interrelationship between people and a phenomenon under research. On the same note, Ajayi (2017) supports this argument by noting that qualitative research is a means of understanding and learning social issues through the analysis of participants' expectations. Mohajan (2017) state that qualitative research is an approach preferred by scientists who want to respond to research questions that need textual knowledge. In support of this, Williams

(2007) note that comprehensive exploration requires a qualitative research approach. Williams (2011) stresses that qualitative analysis relies on the meaning of carefully defined words. The development of concepts, variables, and the plotting of interrelationships between concepts and variables are involved (Williams, 2011).

For this research, a qualitative approach was chosen for the purpose of answering research questions from this research. The research was performed in a natural environment in which respondents communicate. In this research, my goal of using a qualitative approach was to examine the prevalent management relationships in schools and the curriculum management of environmental education in schools.

1. Characteristics of Qualitative research approach

According to Patton (1990), qualitative researchers are interested in understanding the significance that individuals have produced. In my view, it is believed that meaning is transmitted by the experiences of the investigator itself. As part of a specific context and the relationships that exist, qualitative analysis is an attempt to consider circumstances in their individuality.

A second feature of all types of qualitative study is that the primary instrument for the collection and examination of data is the researcher. A third aspect of qualitative research is that fieldwork is typically included. To observe behaviour in its natural environment, the researcher must go to the individuals, atmosphere, place, and institution. A fourth aspect of qualitative research is that it uses an inductive approach for research. Instead of testing current theory, this type of study constructs abstractions, ideas, hypotheses or theories. Qualitative observations are usually in the form of themes, categories, principles or preliminary theories or hypotheses. A qualitative research product is richly descriptive.

2. Advantages, disadvantages, and application of qualitative research approach

Different authors have outlined the advantages and disadvantages of the use of qualitative research techniques and methods.

A. Advantages

First, the qualitative research methodology generates a thick (detailed) summary of the thoughts, views, and perceptions of participants and interprets the meanings of their behaviour (Denzin, 1989). Also, Chalhoub-Deville and Deville (2008) argued that qualitative methods are used to gain deeper insights into issues related to language evaluation design, administration, and interpretation. Secondly, some authors argue that the qualitative research holistically understands human experience (Klein & Myers, 1999; Denzin & Lincoln, 2002; & Richardson, 2012). For instance, Denzin and Lincoln (2002) discussed that qualitative research is an interdisciplinary area that encompasses a wider range of epistemological perspectives, methods of research, and methods of interpretation to understand human experiences.

Thirdly, the methodology of interpretivism research is known as ideographic research which is the study of cases or events (Klein & Myers, 1999); and it can understand the voices, interpretations, and events of various individuals. In this method, therefore, the basis of information is the meaning of various events (Richardson, 2012). Fourthly, qualitative research helps scientists to explore the inner experience of the researchers and to find out how meanings are influenced by and in culture (Corbin & Strauss, 2008). Fifthly, qualitative research approaches are most widely used for data collection, such as participant-observation, unstructured interviews, direct observation, and identifying documents (Cohen et al, 2011). In my view, the researchers engage directly with the participants during the data collection during interviews. Data collection is often subjective and comprehensive. Finally, as the concept can be built and rebuilt to a greater degree (Maxwell, 2012), qualitative research design (interactive approach) has a versatile framework. Thus, by using qualitative research methods, detailed and effective evaluations of a problem can be made, and thus the participants have ample freedom to decide compatibility (Flick, 2011). Therefore, it is easy to grasp complicated problems.

Even though a qualitative research approach is seen as a somehow “perfect approach” to study human interactions and engagements, it has its drawbacks too.

B. Disadvantages

Silverman (2010) argues that firstly, qualitative approaches often leave contextual sensitivities out and concentrate mostly on meanings and perceptions. The findings of a

qualitative approach can offer policymakers little credibility. Secondly, Sallee and Flood (2012) found that when analysis is called upon, stakeholders often use quantitative research. Furthermore, the social and cultural constructions of the variables examined may be ignored (Richards & Richards, 1994).

Thirdly, the smaller sample size poses the question of generalisability to the entire study population in terms of the testing process (Harry & Lipsky, 2014; Thompson, 2011). Finally, it takes a significant amount of time to evaluate the cases, and the results can only be applied in a very restricted way to the wider population (Flick, 2011). To my understanding, this type of a research approach using a generalization form may lead a researcher to think that the results found in the contexts sampled is exactly what is happening around all contexts, while it just a few under research. Therefore, it is important not to present findings as facts that cannot be supported with literature. So, in this way, triangulation of data is important. Finally, the use of the qualitative research approach was used in this research because I feel that this research is more interested in finding out how environmental education curriculum in schools is handled through the application of distributed leadership. I firmly believe that this can only be done through gaining an understanding from participants and sharing their experiences as well.

In my view, for research to take form, it is important for a researcher to explore different research designs and employ one that is appropriate for their research.

4.5 RESEARCH DESIGN

Sileyew (2019) states that to provide an effective context for a study, a research design is intended. In support, my view is that the nature of research has an important influence on the reliability of the results obtained. It thus serves as a firm basis for the entire research. The design is the conceptual blueprint through which research is performed, according to research (Akhtar, 2016). Furthermore, Akhtar (2016) notes that a research design can be regarded as the research design, it isa "Give" that keeps together all the elements of a research project, in short, a plan of the proposed research work. A research design is a process used to perform research, to decide how and where information is obtained, and to follow the research questions. McMillan and Schumacher (2010) note that the method of performing the analysis

is specified by a research design and it describes where, when and under what conditions the data is collected.

A research design is important because it facilitates the smooth navigation of the various research operations, making research as effective as possible and providing maximum data with minimal effort, time, and money expenditure (Akhtar, 2016). When performing a study, there are numerous types of research designs that can be used.

4.5.1 Different types of research designs

These different types of research designs comprise; exploratory, descriptive, explanatory, and experimental research designs as discussed below.

4.5.1.1 Exploratory research design

It is the primary research process, and the purpose of this research is to gain new insights into a phenomenon (Akhtar, 2016). This study is one that has the function of formulating a problem for more precise analysis of a problem for more precise investigation or hypothesis creation (Stebbins, 2001). In the case of a problem for which little research information is accessible, exploratory studies are generally more suitable. For example, there is little knowledge available for social contact habits, and an enterprising researcher may be interested in such a problem to gain insights in the face of little knowledge available about it (Swedberg, 2018). Through my reviewing of literature, exploratory research designs are usually adopted in a mixed research approach to access information using two research approaches to study one problem. Therefore, exploratory research design was not utilized in this research as I adopted only one method.

4.5.1.2 Descriptive research design

It is also known as statistical analysis which explains the nature of phenomena. It is used to classify and obtain data on the characteristics of a specific problem, such as culture, group, or individuals (Nassaji, 2015). In other words, we may conclude that social activities, social systems, social conditions, etc. are defined in this form of study. Observe and explain what the observer has found? The questions are answered through descriptive research: what, who, where how and when (Andriani et al, 2018). It is used to research the present scenario. It is commonly used in the natural sciences and physical sciences. But in social sciences, as in

socio-economic surveys and work and task research, it is more widely used (Akhtar, 2016). In my view, descriptive research designs give a clear description of how things happen, where, how and who does what. It best explains the process of what is happening in the present moment. The current research adopted a descriptive research design to best describe how school stakeholders manage environmental education curriculum in schools. The descriptive research design allowed me to explore the data that best explain the roles of stakeholders into managing environmental education curriculum.

4.5.1.3 Explanatory research design

Explanatory research design is when the object of the study is to discover a new universe, one that has not been previously explored (Strydom, 2014). The research is mainly concerned with causes of some phenomenon or "why" factor (Akhtar, 2016). The research is mainly concerned with causes of some phenomenon (Ekanayakage & Wishart, 2014). To my knowledge, this research design explains why things are happening, mainly the reason behind human behaviour and/or an environmental reaction. The current research did not utilize the explanatory research design as the topic of environmental education has been previously explored.

4.5.1.4 Experimental research design

Experimental design is used to assess a causal relationship research design under controlled circumstances (Mildner, 2019). We should note that an experiment is an examination under controlled circumstances, or in other words we may assume that it is a design that manipulates some of the variables being examined or that tries to monitor the situation in which people are observed (Mitchell, 2015). Control of conditions means that the phenomenon or the situation should not be allowed to alter while the research is going on (Akhtar, 2016). In studies, various forms of data need to be controlled so that it is possible to evaluate the alternative hypothesis and search for causal associations. In short, control here means keeping the factor constant once while others in the experiment are free to vary (Akhtar, 2016). In short, control means keeping the factor constant once. The independent variable is manipulated and its influence on the dependent variable is evaluated, while other variables are monitored that can complicate such a relationship (Skidmore, 2008). In my view, during an experimental research design, a researcher needs to employ researchers to use for the

experimentation and results are based on the outcome of the experiment and not on the experience of the person conducting the experiments. The experimental research design was not utilized because, no experiments were conducted for this particular research.

4.5.2 Case Study

Harrison et al (2017) state that a case study is based on an effective approach for carrying out and understanding various real-world problems. In corroboration with Harrison et al (2017), a case study is a close review of a phenomenon to gain understanding of an unusual/if not usual behaviour of participants and their experiences in each phenomenon. Seemingly, Starman (2013) note that a case study is a method that in its fullness and truthfulness studies a situation. Gustafsson (2017) note that a case study is described as an intensive study aimed at generalizing over several units about a person, a group of individuals or a unit. In addition, Starman (2013) note that a case study has many meanings, and this has led to several meanings of what is a case study. A descriptive case study was employed in this research to gather data (Yin, 2014). The case study design was useful in better influencing the interpretation of the participants' experiences.

4.5.2.1 Descriptive Case Study

The descriptive case study design makes it possible to examine new and unclear phenomena in detail while maintaining the detailed and essential characteristics of a particular phenomenon in real life (Phelan, 2011). A descriptive form of case study helps an investigator to closely analyse the data within a specific setting (Zainal, 2007). Rowley (2002) argues that case studies are good for current incidents because it is not possible to influence appropriate behaviour. Events are extensively analysed in a comprehensive case study at a given time and the researcher gathers comprehensive data on the individuals, programs or activities based on the investigation (Leedy & Ormord, 2013). In this current research, through the triangulation of research instruments and data collection versatility, the descriptive case study design helped address the research questions. In the current research, the descriptive case study (Yin, 2014) allowed thorough research into recent developments regarding a real-life phenomenon and to address the cause-and-effect questions in relation to strategies that can be used to strengthen environmental education curriculum management through distributed leadership.

4.6 POPULATION AND SAMPLING

Taherdoost (2017) state that a population is identified as a community of individuals who provide information. I endorse that a population is a group of individuals that the researcher seeks to study to obtain the data needed. The sample selected in this research were: three principals, three SMT members, three teachers and two subject advisors in one district, that 11 participants in total in KwaZulu Natal (KZN) schools. One participant may seem limited in research and this may lead to corrupted data (Creswell, 2015). The criteria used for the selection of participants is based on the probability that they have significant data available in the research at hand or not (Creswell, 2015). These participants reside in the UGU Education District of the KZN Province situated on the South Coast. The researcher selects the right sampling community for purposeful sampling, which can provide sufficient data (Crossman, 2018). The sample participants are most appropriate for this research because they are primary data sources to help the researcher to answer the research questions after analysing the data.

4.6.1 Non- Probability Sampling

Non-probability sampling is characterised as a technique of sampling in which the researcher chooses samples based on the researcher's subjective judgment rather than random selection (Fleetwood, 2020). In their view, it is important for a researcher to choose a sample that can best answer the research questions that fits the context of the research.

4.6.1.1 Purposive/ Judgmental Sampling

In this research, purposive sampling was used as participants were intentionally selected to benefit from rich data. The purposive sampling, also known as selective or arbitrary sampling is a sampling process in which a researcher relies on his or her own decision (Palinkas et al, 2015). In this perspective, purposive sampling is ideal for detecting and selecting information-rich cases relating to the phenomenon of interest. One of the cost-effective and time-effective sampling techniques available is the benefits of purposive sampling (Crossman, 2018). The drawbacks of purposive sampling are the researcher's susceptibility to errors in judgement, low levels of reliability and high levels of bias and inability to generalize test results (Palinkas et al, 2015). However, as explained in prior sections, to

mitigate this drawback is to triangulate data, while backing it with literature, and I have followed this route to back up collected data in Chapter 5.

In my view, after selecting your population and sampling your participants it is in the best interests of every researcher to follow strict rules when collecting data to choose correct data collection methods as well.

4.7 DATA COLLECTION PROCEDURE

According to Langkos (2014), data collection is defined as a procedure of collecting, measuring and analysing accurate insights for research using standard validated techniques. According to my knowledge, is important for a researcher to get this stage correctly because should anything at this stage go wrong, the whole research may need to be restructured or completely redone. In this research, I obtained information from three principals, three members of the SMT, three teachers and two subject advisors who acted as primary data sources. This data was collected in the form of interviews, observations, and analysis of documents. This information was collected directly from individuals involved in the development, management and teaching of environmental education curricula in schools and who had initial experiences with the environmental education curriculum. As I went to observe and obtained an opportunity to collect data that was not shared by the participants, observations were performed from classrooms.

The education system was and still faces major problems, and the future of education and the biodiversity of the world are at stake. Principals, members of the SMT, teachers and subject advisors were given the opportunity to share their views on environmental education curriculum management in schools along with challenges through interviews and to recommend ways that could help improve environmental education curriculum management.

The data collection procedure stages that have been followed are listed on table 4.2 with clear descriptions (Kristjansson et al, 2013).

Table 0.2: Stages for collection of data among principals, SMT members, teachers, and subject advisors in KZN secondary schools)

Stage number	Activity	Description of the activity
01	Obtain approval from the University for using people as sources of data	<p>Obtaining approval from the Committee of the College of Education and obtaining an ethical clearance certificate from the board to receive permission to perform the research. This is generally done to ensure that the study is consistent with South African constitutional laws and to ensure that the study is successful and will enhance the awareness of the selected population. This had to be performed three to four months before the actual data collection took place. This is important for data collection from minors in schools in many countries (Kristjansson et al, 2013). Having approval ensured that all guidelines for participating individuals were followed and that protocols of parental and subject-informed consent were planned, pilot tested and finalised.</p>
02	Dictate suitable schools and prospective population	<p>One to two months before data is gathered, this process is performed (Kristjansson et al, 2013). Data is gathered from a sampled school, which includes the name, school address, learner's roll, etc. Only one principal, one SMT member, one teacher (Natural Sciences teacher in grade 9 classes) from each school and two subject advisors from the district of education will be included in this research, as this study is mainly aimed at this community. A letter of intent is sent to the school headmasters and the DBE gatekeeper to seek permission for data collection in their schools prior to any information being collected. This is very valuable data that needs to be preserved by the university</p>

		because it is a critical component of data collection process planning (Kristjansson et al, 2013).
03	Orchestrate pre-study notice among the society	A brief letter with a brief description of the intent of the study to be conducted, which is not more than a page, will be sent to the school headmasters one month before data collection. This letter will state the reasons for this research and will explicitly state that for each person involved in the study, the language used is suitable. The letterhead of the university needs to be in the letter.
04	Request participation of the school community (teachers and learners)	This should be done three weeks prior to the collection of data. A more in-depth letter must be sent to the headmasters of the school, in which they are encouraged to allow their school to collect data. This letter is similar to the letter in stage three, but more detail is included. The same university letterhead is used and should contain all confidential information about the researcher's specifics, the study's motives and how many individuals are going to be used as data sources. In this text, the headmasters should be told that they would have access to the information obtained at their schools.
05	Procure the headmasters' support	The in-depth letter should be accompanied by a diplomatic phone call one week after stage four has been completed, whether the headmaster has replied or not, in order to give him/her an opportunity to raise questions they may have about some aspects of the study. This shows the headmaster how determined it is for the researcher to undertake the research.

06	Arrange interviews, focus group interviews and observation equipment for every school taking part	At this point, data on the number of participants and the classes are participating in the study should be available. A file that contains the required details about each school and the participants is prepared. Every part of the school, the name and so on should be recorded in this file. At this point, all interview questions are in order and are filed a week before data collection for each school. In order to prevent mixing and misunderstanding of results, these questions must be placed in an envelope.
07	Visiting each school	In order to ensure that the researcher officially introduces himself to the participants and the school headmaster, this visit must be four to five days prior to data collection. In order to avoid confounding participants, the problems of interviews and focus group interviews should be addressed beforehand if possible. As this is a study aimed at inspiring principals, SMT members, subject advisors and teachers, the researcher claims that there is no harm in addressing questions.
08	Distribution of consent forms to teachers and parents to read and sign on behalf of their children	It is necessary to ensure that consent forms are sent to participants three days before data collection, since it is against the law to use people as data sources without their consent. Inappropriate terminology that participants would not be able to understand and should clearly state the reasons for this study must be written in this letter. Participants are entitled to withdrawing from the research if they believe that the research will pose some

		danger to their lives, although this is doubtful since during school hours these interviews will be performed on school premises.
09	Headmaster and participants reminder	A day before gathering information, the principal will be contacted to remind him/her of the interviews and observations, as well as to remind all the people involved in their school. This will allow the principal of the schools to ensure that all interviews are set and suitable for the location of the interviews and observations.
10	Distribute appreciation letters to all participants involved in the study	After the data collection process has been completed and finalised, a letter of gratitude for their support and help to make this study a success is given to the schools within a period of two weeks. One to two months after gathering the data, the data is then transcribed and returned to participants for them to read and point out whether any data is incomplete or misinterpreted. A phone call or visit follows after two weeks to check how respondents have been after providing details.

Procedures for collecting data were helpful because they instructed me on how to collect data and acted as a reminder of the most significant aspects of this research.

4.8 DATA COLLECTION METHODS

In my perspective, data collection methods are research tools used to collect data from participants that is appropriate and necessary for the research under investigation. Peersman (2014) in support, also state that the processing of data is a method of collecting participant information. In this study, I used three methods to collect data for the purpose or exploration and explanation of the data collected through interviews. To gather data, in this research, I adopted individual interviews, document analysis and observations to find ways in which

distributed leadership can be utilized to handle environmental education curricula in schools. Individual interviews between principals, SMT, teachers and subject advisors were used. Documents from the Department of Basic Education (DBE) and other environmental institutions was examined and interpreted to provide my voice, and the school dynamics in terms of leadership and how curriculum is handled in schools was studied in a school.

4.8.1 Individual interviews

Check and Schutt (2012) states that an individual interview is held between an interviewer and an interviewee. In support of Check and Schutt (2012), I perceive individual interview as a one-on-one conversation between a person who is interviewing and being interviewed. In my knowledge, this kind of interview is valuable as it helps an interviewer to clearly understand what the interviewee articulates. I performed a semi-structured interview with 11 participants in this research, namely three principals, three SMT members, two subject advisors and three teachers from three chosen schools in one district. An interview guide was designed using research questions to conceptualize interview questions which is attached as appendix E.

I chose semi-structured interviews because they allowed me to probe more specific data that could provide insight into the research while being guided by the schedule of the interview. Flexibility is one of the main benefits of semi-structured interviews (Adams, 2015). Dejonckheere and Vaughn (2019) advocate that one of the best data generation methods that could provide useful data that could not be accessed by any other means is the semi-structured interview. I created interview guides to enable me during the interviews to establish a field of inquiry and to probe initial responses. The interviews provided the most definite evidence of leadership practices in successful schools; and helped me to obtain accurate and valuable information on effective school leadership practices in their various locations and contexts for potential use by the rest of other schools.

In this research, I interviewed participants individually to ensure confidentiality and to provide each participant with the ability to express his/her leadership activities without being impacted by others. For around half an hour, the interviews were conducted face-to-face with principals, SMTs, teachers and virtual interviews on Microsoft teams with subject advisors (departmental officials). I used face-to-face interviews to collect data because they had a

potential of allowing me to read facial expressions of participants while providing information. I also chose virtual interviews as a tool because they offer the ability to communicate in real time with geographically dispersed individuals through a computer, and/or any mobile device. Another advantage of using Microsoft teams is its ability to securely record and store sessions without a recourse to third-party software which maintain trustworthiness of the data. Dejonckheere and Vaughn (2019) argue that knowing the sense that people make to their experiences is important for the researcher, and interviews are the best method for this aim. In preparation for the interviews, I met with the participants to get to know the research site and participants a month before the date of the interviews so that I could gain the participants' confidence. These interviews took place at the participants' workplaces and the data supplied by the participants was transcribed and interpreted according to the research questions. To keep the data gathered discreet, I had one interview session with each of the participants.

The interview questions were based on various leadership styles in these interviews, such as team leadership, reflective, distributed, transformative, instructional, and self-leadership. In this, leadership qualities such as tactical and strategic qualities were also examined. The questions of the interview were also focused on tactical skills exercised in the school, such as communication skills, performance management, interpretation, and decision, making, advocacy for quality improvement, empowerment skills and strategic skills such as leading through vision and values, building trust, encouraging learning, and building partnerships.

4.8.2 Document analysis

Bowen (2009) defines document analysis as a systematic method for analysing or assessing documents. Bowen (2009) further state that document analysis is frequently used as a means of triangulation in conjunction with other qualitative research methods. O'Leary (2014) supports Bowen (2009) by stating that the analysis of documents is a method of qualitative research in which the researcher interprets documents to give voice and meaning to a research subject. In light of Bowen (2009) and O'Leary (2014), I view document analysis as an efficient way to obtain data because records are manageable and realistic tools. In support, Documents are commonplace and come in a range of ways, making documents a source of knowledge that is very open and accurate (Viswambaran & Priya, 2015). In my view, this

research would benefit from the use of document review by presenting data that can be used to analyse the DoE's policies concerning curriculum management in schools. Data analysis is useful for the acquisition of factual knowledge and the downside is that when input and output knowledge is not data based it cannot be used (Bowen, 2009).

I collected related texts on the internet on ResearchGate, academi.edu, google scholar and at schools, such as curriculum assessment policy and statement documents, Personnel Administrative Measures (PAM) document, research papers, natural sciences textbooks and research books on environmental education incorporation, environmental education implementation, environmental education curriculum management, distributed leadership, and school curriculum management. I then established a method for organizing and handling these papers. A document analysis guide was created with the utilization of research question to come up with document analysis questions to be answered by the analysis of texts which is attached as Appendix F.

I needed to make copies of the original for annotation, evaluate document validity, and I explored the context details and explore the substance of it. I was able to view those documents on the internet, as well as from the DoE district in KZN.

4.8.3 Observation

In my view, observation is a structured method of documenting participants' behavioural habits without challenging them. For this research, observation was suitable as it enabled me to collect data on physical and human settings (Ajayi, 2017). I had the ability to obtain details that might be difficult for participants to share during interviews. In my knowledge, the interviewee has the right to choose what to say or not during an interview, but through observation the researcher may find useful information for the research. Again, in my perspective, through observation, a researcher can collect the first information. According to the Kawulich (2012), observational data provides the researcher the ability to collect "live" data from the "live" situation. Ekka (2021) suggest that the observational data helps the researcher to access and understand the situation under research. The benefits of observations are that they help the researcher to investigate the conscious and unconscious bias of the participant in presenting a researcher with their best selves (Ajayi, 2017). The drawbacks of the using observations are that the researcher has no environmental influence.

For this current research, I collected information on school facilities through the observation schedule that included the questions that were answered by observing the institution designed using the research questions as a guide to conceptualise observation questions to be answered which guided what I observe in schools, and this helped me to understand the kind of relationships and behaviours that occur in schools. I observed activities such as the design of school buildings, such as mobile classrooms, the setting in which the school is located, the situation in the classroom in terms of the type of technical devices available, the sitting schedule, and the magnitude of learners per class and after hours of teaching sessions. I observed the leaders of the school, the connections that occur in schools in terms of school management, the essence of the school buildings, and so on. In school, observations were performed twice, and the observations took from two hours to four hours. The results were documented, and the information obtained from observations were interpreted.

4.9 DATA ANALYSIS METHODS AND INTERPRETATION

To explain a phenomenon of interest, qualitative data analysis is characterized as a process of coding, emerging trends, and categorizing data and interpreting information (Ngulube, 2015). In my view, data analysis, is a process of identifying trends, interrelationships and differences from the information provided by participants. Texts from interviews with participants and field notes during observations were transcribed during the data gathering process. All interviews were documented on audio, system-built recording on Microsoft teams and written notes were made. Data was then transcribed, which is a way of translating the captured audio data and field note information into text (Creswell, 2015). Because of the answers, research questions, theoretical context, goals and the purpose of this research, data was analysed and interpreted. Below are some steps on how data was analysed are addressed. In terms of analysing data, I adopted thematic analysis and I categorized the data that seemed to be the same and listed the data for review.

Table 0.3: Steps of data analysis

Number of steps	Researcher activity
1	The first step of data analysis is setting of goals, in this research I have set a goal that determined what exactly the research aimed to find.
2	I chose data collection methods to collect the required data and the data sources.
3	Data collection, getting on the field to collect data.
4	Data cleaning, I had to find, amend, and remove any incorrect data, this can involve duplicated data.
5	Data analysis, this involved grouping and determining the distinct characteristics on the collected data. The data was then examined to find major features of the data. Then, I interpreted the data collected.
6	After data was collected, sorted, and analysed, I was able to interpret the data. This enabled me to determine whether the data collected was helpful in answering the research question.

In my knowledge, it is important for a researcher to choose an analysis tool.

4.9.1 Thematic Analysis

According to Braun and Clarke (2012), a thematic analysis is a methodology that systematically defines, organizes, and offers insight into meaning patterns (themes) through a dataset. Thematic analysis makes it possible for the researcher to precisely establish the relationships between concepts and compare them with the replicated data (Alhojailan, 2012).

A thematic analysis is a mechanism in which a theme is formed from the collected data by comparing the codes (Vaismoradi & Snelgrove, 2019). In this research, a thematic analysis was used to interpret the accumulated data from interviews, observations, and examination of documents. To calibrate myself as an instrument of analysis, I familiarized myself with the data collected and then used coding to code data; after that data was organized into codes from the transcriptions. Then data was organized into three themes and categories to interpret the findings. The analysis was validated by my supervisor to compare the transcription with the voice recordings of participants answering questions and pictures taken on the research sites as a form of ensuring credibility and trustworthiness. Also, participants were given a chance to read the transcriptions to validate that what is written is exactly what they have said.

4.10 ETHICAL CONSIDERATION

I was aware of the ethical concerns associated with research involving human subjects in the conduct of this research. These may include research authorization, participant informed consent, anonymity, confidentiality, beneficence and non-maleficence, autonomy, and integrity (Barrow & Khandbar, 2019; Anney, 2014; Zukauskas et al, 2018). In keeping with ethical standards associated with the qualitative research approach involving human beings as subjects, the following are some of the protocols I followed.

4.10.1 Permission to conduct research

I applied for an Ethical Clearance Certificate from the Committee (REC) of the College of Education (CEDU) at the University of South Africa (UNISA) to receive a study permit because it is necessary to obtain permission from the people in charge. At the Department of Basic Education (DBE) district and schools where information was obtained, I also wrote letters to the gatekeepers. It is important to first receive permission from gatekeepers before approaching participants in research sites. As a researcher this gives validation that your study is recognized as contributing to the body of knowledge.

4.10.2 Informed consent from participants

I informed the participants that their engagement is voluntary. After reading this to them and knowing all the requirements, I then provided participants with informed consent forms to sign. As a researcher, I explained to the prospective participants all the procedures. In my

view, gaining consent from participants allows a researcher to gain trust from participants and to freely share their views, real life experiences and their information about a subject on research.

4.10.3 Anonymity and confidentiality

One of the main concepts of social science research is that if participants are to reveal their identities and involvement in a study, they must receive permission from the respondent (Kaiser, 2009). I ensured that I do not ask participants for their real names to ensure privacy and confidentiality of respondents. While presenting data, I ensured that the identities of the participants were only known to me as a researcher if any visual material was added (Crow & Wiles, 2008). During the study, personal information of all participants was not exchanged, and pseudonyms and codes were used to maintain confidentiality where possible (Kaiser, 2009). In my knowledge, the identity of participants should be protected at all costs. Participants need to be assured of their anonymity, in this way they become free to open and even share experiences that they never want anyone else to know

4.10.4 Balancing principles of beneficence and non-maleficence

Researchers are expected to ensure, as far as possible, that no harm is done to human subjects and that they gain some benefit from the analysis (Kruger et al, 2014; The Committee of the National Research Council, 2004). I must point out that as used in this context, the word 'gain' may not refer to the advantage of having anything as a reward, but it can refer to benefiting society by ensuring that correct data is given (Resnik, 2018). In this research, therefore, I assured the participant during the recruitment process that due to their involvement in this research, no harm will occur to them and that this study will help them in a sense of empowerment, as well as an increase or contribute to the knowledge hub of information. During the research process, during data collection and presentation, I ensured that the participants were not subject to any harm (Avasthi et al, 2013; Townsend et al, 2010). In my perspective, when referring to harm, we are also referring to loss of jobs or any other effect that may befall them for taking part in a study. A researcher needs to ensure that participants responses remain anonymous so that they are not subjected to job loss after finding out what they have shared. I ensured that participants were not subjected to any harm by ensuring that I do not share the details of my conversations during interviews with the other staff members even

during interviews with them. Data collected was analysed and pseudonyms were used to ensure that their responses are not traced back to them. I also avoided taking pictures of the schools and enclosing them on this research, because the uniforms and school buildings can be easily traceable and that can put the jobs of the participants and stake.

4.10.5 Autonomy and dignity of participants

It is a researcher's duty to respect the perspective, information, skills, and experience of the potential participants (Barrow & Khandhar, 2019). I valued the cultural, function, and individual distinctions in this research. In participant selection, for example, and in the content of the research itself, I also avoided any unequal, prejudiced, or discriminatory procedure. For a researcher, the other thing that he/she needs to ensure is neutralism. As much as a researcher may share a different view, cultural practice or belief, a research site is not a place to practice your beliefs, but rather a place to learn about other people's beliefs without him/her imposing his/her beliefs on participants. To ensure that all participants had autonomy, I fully informed participants of what the research entailed, allowed to decide whether they want to be part of the study and then gained consent to participate. Participants were made aware that they have every right to withdraw from the study at any time when they do not feel comfortable.

4.11 QUALITY ASSURANCE OF DATA

In my view the quality of research data is identified by the researcher while collecting it and the readers of the research. This means that a researcher needs to follow all protocols from research methodology, choosing a research approach, design, and methods of data collection and then how data is stored, analysed, and presented. According to Hammersley and Traianou (2012), the trustworthiness of qualitative results requires methods and data triangulation, which involves the use of various methods of data collection to collect data from different data sources and the use of member checks while collecting and writing data from participants. In this research, I documented all interviews conducted in this research and then arranged information to be checked by any person participating after an interview through a follow-up visit after the data collection process and transcription of all interview data to ensure that all information given is correctly presented.

Both information and responses by respondents were audio-recorded after receiving permission from participants in the promotion of trustworthiness. In order to elicit open answers that provide direct and appropriate details on the subject matter, research questions were necessary. In other research, the below characteristics demonstrate the reliability and triangulation of qualitative findings (Anney, 2014; Elo et al, 2014), which are discussed in this research. Because this is a qualitative study and it does not employ a positivist research paradigm, the term trustworthiness was employed rather than validity and reliability.

4.11.1 Credibility

Credibility relies on the researcher's faith to show that the study's findings are real and that the truth-value element is concerned (Anney, 2014; Korstjens & Moser, 2017). In my view, this involves triangulating different data sources and control members while gathering and analysing data obtained from all participants. To ensure trustworthiness, all information given by participants from the interviews were audio recorded. After being written and evaluated, all information were reviewed by all respondents (Korstjens & Moser, 2017). All details were captured on audio and video after the participants have given permission. All data was transcribed and reviewed, corrected, and completed by members.

4.11.2 Transferability

The application of the study findings in other environments is transferability (Terrel, 2016; Shenton, 2004). In my view, transferability of knowledge should take place and should be well demonstrated by the researcher. I provided all the information about the activities that took place on the research site via the explanation of an event. This showed that the effects of the analysis can also be implemented in relative settings.

4.11.3 Confirmability

Confirmability implies that other researchers can authenticate the study results, it also removes the idea that the results of a study are derived from the raw data obtained by the minds of the researchers, and this is largely a presentation problem (Anney, 2014; Gunawan, 2015). Shenton (2004) notes that steps must be taken to help ensure as far as possible that the results of the work are the product of the respondent's' perceptions and ideas, rather than the researcher's characteristics and preferences. In my perspective, the research findings should

be confirmed by literature or findings of other scholars. I made sure that other scholars backed up the analysis of the results.

4.11.4 Dependability

Dependability refers to the unchanging study result over a span of time (Gunawan, 2015; Shenton, 2004). In my knowledge, findings of the study should be dependable if another research is to be undertaken in the same context. This implies that if another researcher were to do the same analysis, the results of their study would be the same. In this situation, I have kept all the paperwork so that I have something specific if there is a need for auditing.

4.11.5 Triangulation

In qualitative research, triangulation refers to the use of several approaches or data sources to establish a detailed understanding of a phenomena (Carter et al, 2014). In this research, triangulation includes various methods of data collection namely, face to face semi structured interviews, participant observations and document analysis or the most common use of different theories outlined as distributed leadership, transformational leadership, and social constructivism which can be regarded as triangulation of data and triangulation of theory (Kadushin et al, 2008). This research improved and benefited from the use of multiple data collection methods by increasing confidence in research data, developing new ways to interpret a phenomenon, revealing specific results, incorporating theories, and offering a better understanding of the problem (Thurmond, 2001).

4.12 SUMMARY OF THE CHAPTER

This chapter focused on the methodology that was used in this research. An explanation of a research paradigm which was a constructivism research paradigm. The research approach that was used which was qualitative research approach, a research design which is a descriptive case study and data collection and analysis methods used. This chapter also discussed all the measures followed during the data collection and information about the sample used. Ethical considerations adhered to in this research and how trustworthiness was maintained was also discussed in this chapter.

5. PRESENTATION OF RESULTS

“You cannot change the world alone- you need some help- and to truly get from your starting point to your destination takes friends, colleagues, the good will of strangers and a strong coxswain to guide them”

William H. McRaven

5.1 INTRODUCTION

William’s quote emphasizes a need to collaborate and work together to change, improve and working towards achieving organizational goals collectively as a team (McRaven, n.d). The previous chapter focused on the methods adopted to conduct the current research to collect and analyze data. However, this chapter mainly focuses on the presentation and analysis of results. Through reviewing literature, I came across different data analysis techniques by different scholars. For example, qualitative content analysis, narrative analysis, discourse analysis, thematic analysis, grounded theory, and interpretive phenomenological analysis. However, for this research, I adopted a thematic analysis theory.

5.2 DESCRIPTION OF CASES AND CODES

This research has employed the descriptive case study as a research design of three schools, the three cases are tabulated below and the names of the participants are pseudonyms.

Table 5.1: Table of cases and participants

CASE 1	CASE 2	CASE 3
<p>CASE 1</p> <p>Is represented by:</p> <p>Mrs Sydney (Principal)</p> <p>Mr Kim (Head of departments (HOD))</p> <p>Mr Mkhungo (Teacher)</p> <p>Mr Mofolo (Subject advisor)</p>	<p>CASE 2</p> <p>Is represented by:</p> <p>Mr Mthunzi (Principal)</p> <p>Mrs Kubheka (HOD)</p> <p>Mrs Chetty (Teacher)</p> <p>Ms Nkosi (Subject advisor)</p>	<p>CASE 3</p> <p>Is represented by:</p> <p>Mrs Mkhize (Principal)</p> <p>Mr Knowles (Deputy principal)</p> <p>Ms Khumalo (Teacher)</p>

5.3 PRESENTATION OF RESEARCH RESULTS

As mentioned in the methodology in chapter 4, data were collected from one district in KwaZulu-Natal and in three schools with two subject advisors, one responsible for monitoring natural Science (Mr Mofolo) and one for Technology in a Senior Phase (Ms Nkosi), three principals, three SMTs, three teachers who teaches Natural Sciences in Grade 8. It is important to note that this study aimed to interview parents as part of the management team of the school. However, the SGBs in schools are only catalysts of discipline and the management of finances and hiring of staff members in schools. They are not informed about curriculum management and this indicates that there is no link between literature and practice in schools. Observations were also conducted in three different schools to observe the management practices in the school and the implementation process of environmental education lessons (delivering of environmental education lesson in class). I also conducted document analysis on the CAPS document used to teach Natural Sciences to analyze the depth of environmental education implementation and integration. In the following section, I will present the results to answer the research questions of this research. I commence by presenting the results of interviews followed by observations and then document analysis.

The results presented in this section aims to answer the following research questions: What is the role of school principals, school management teams (SMTs), teachers and departmental officials in managing environmental education curriculum? What are the challenges and opportunities of school principals, department officials, teachers, and school management Teams (SMT) in achieving distributed leadership in the management of environmental education curriculum? and what strategies contribute to successful distributed leadership in schools to manage environmental education curriculum?

5.3.1 Evidence from Interviews

In presenting the results on the interviews, I commence by writing the summary title of the interview questions posed to the respondents and thereafter the responses that I consider pertinent to this research. Some of the responses were not relevant as they did not inform the objectives of this research and thus were unlikely to contribute towards answering the

research questions. The themes presented in this research emerged from the literature review and was informed by the data collected on the field through interview, observations, and document analysis.

5.3.1.1 THEME 1: DESCRIPTION OF LEADERSHIP AND THE ROLES OF A LEADER

This section presents the results that emerged from the data collected through interviews where participants were asked how they understand the concept of “leadership” and what they think might be their roles as leaders to answer the first research question (what is the role of school principals, school management teams (SMTs), teachers and departmental officials in managing environmental education curriculum?) that were pertinent for this research. These results will give an understanding of how the leaders who manage environmental education understand what they do and carry out their roles.

a. Understanding of the roles of a leader

According to Mr Mofolo, a subject advisor, a leader is “*someone who is able to guide, tell the truth and listens to other people.*” In this description, Mr Mofolo is of the view that in order to guide people, a leader must be someone “*who is able to work with other people*”. He further argued that “*if there is a need for the truth to be told, it has to be told even if sometimes it hurts*”. Similar to Mr Mofolo, Ms Nkosi, also a subject advisor, suggested that a leader is “*someone who will be able to, guide and support subordinates*”. She indicated that this guidance may lead to reaching “*a particular organisational goal*”. Notably, Mr Mthunzi, a school principal indicated that a leader is someone “*who is working with people, set an example, understands people and the environment.*” He further indicated that such a leader would be expected to “*show people the way*” and “*show people what you expect*” “*by being exemplary*”. Mrs. Chetty, a teacher, mentioned that “*even though I am not in a leadership position, but I take leadership as someone that has to lead*”. The participant further mentioned that “*a leader is someone who is at the front then there are people who depends on you who are at the back*”. In her description of a leader, she further argued that if a leader wants to lead from the front, as a leader “*you should lead by example. The things that you say or do need to reflect what you say you are, that is my understanding*”.

This section only presented the responses of only four participants because other responses were a repetition of what these participants have already shared. Based on what the participants indicated, I noted that they were not able to provide a succinct definition of a leader. Instead, they described a leader using the perceived roles of a leader. In this instance, the major responsibilities of the leader, emerging as from these participants were, *provision of guidance, communicating reliable information, working collaboratively, and provision of support.*

b. Styles of leadership that participants are familiar with and which they prefer to use

The participants were also asked to describe the leadership styles with which they are familiar. As informed by literature understanding the different approaches can help leaders to be more effective through comprehending how and why they do, as well as helping them identify where and when they need to adapt their style (Price-Dowd, 2022). It was pertinent for this research to assess the knowledge and familiarity of school stakeholders with the different styles of leadership to understand how leaders effectively fulfil their roles.

Ms Nkosi, a subject advisor, indicated that *“the styles of leadership that (she) knows are too many”*. The first leadership style she listed is the *“democratic leadership”*. She described democratic leadership style as *“where people listen to each other and come to an agreement”*. Ms Nkosi further mentioned that she became familiar with democratic leadership from the *“liberation of our country”*. The participant further mentioned another leadership style which is *“autocratic leadership”*. She alluded that she became familiar with autocratic leadership through the practice of *“her supervisors”*. She mentioned that she *“prefers democratic leadership”* over other leadership styles. Similarly, Mr Mofolo who is also a subject advisor mentioned that he is familiar with *“too many”* leadership styles and was able to list them as *“autocratic, authoritative, democratic, coaching, lase-fare, collegial and transformational”*. Mr Mofolo further mentioned that in his leadership he uses *“a combination of all the styles”*. He referred to this combination of styles as *“collegial leadership”*. According to Mr Mofolo, *“collegial leadership”* is an effective leadership style because it *“allows everyone to be treated as a colleague”*. Mr Mofolo’s perspective is that collegial leadership can be applied through *“sharing of power, ideas, by giving responsibilities and guidance when things are not going right”*. He further stated that, *“there are decisions that we cannot take because of*

our work situation, and for example, if there is a curriculum outline, we cannot deviate from the curriculum”.

Another participant, Mr Sydney, a principal, listed three leadership styles that he is familiar with. He first mentioned “*instructional leadership*” which he described as a leadership style, “*whereby you aim to do the law of the institution to come up with strategies*”. He stated that he learnt about this style of leadership from “*Steve Kovi where a leader works closely with his followers*”. According to Mr Sydney, he prefers “*democratic and transformational leadership when working with the SMTs*”. Similar to Mr Sydney, Mr Mthunzi who is also a principal, mentioned that he adopts “*instructional leadership*”. In his description, “*instructional leadership say what you promote at school is not only effective teaching and learning, but the maximum “productive” teaching and learning*”. Mr Sydney perceives that instructional leadership informs, “*that teachers’ have to be given opportunities to perform*”.

Mr Kim, an HOD mentioned that he is “*guided by Batho Pele and democratic leadership*”. Mr Kim further argued that in his application of Batho Pele, “*it must be learner first, parents and visitors*”. The participant elaborated further that he “*believes that when you are coming to the school, you come because you need assistance and you might need to hurry somewhere else, while I can still see the learners*”. He added that he adopts a democratic leadership style because, “*I like the department to come up with ideas of how we can do things, guide by the department or school*” and he prefers “*distributed leadership*”. Mr Mkhungo, a teacher does not seem to consider himself as a leader as he mentioned that “*although I am not involved in leadership*”. Mr Mkhungo mentioned that he is familiar with one leadership style in his school and that is “*autocratic leadership*”. According to Mr Mkhungo, autocratic leadership “*means that the leader is taking all decisions that do not allow others to share their views*”. He further argued that he has witnessed an autocratic leadership, “*like here in our school, there are so many things that they do that we are not happy with*”. However, he “*believes that leadership be a democratic one*”. Similarly, Ms Khumalo, a teacher, mentioned that she is familiar to “*autocratic leadership*”. The participant further argued that in her school there is no platform to share ideas because, “*there is no need to suggest anyway because whatever the principal and SMT have decided will be done*”. Lastly, she mentioned that she prefers a “*transformational leadership because I do not think there is anyone who likes to remain in a PLI position*”.

Based on the responses of participants, I noticed that participants are familiar with democratic, autocratic leadership, autocratic, authoritative, democratic, coaching, lase-fare, collegial and transformational. However, as other participant has mentioned that they are familiar with too many leadership styles, but only Mr Mofolo was able to list a substantive leadership style while others can only list two or only three leadership styles. A favourable leadership style for most participants have been of democratic leadership evidence in their responses.

c. Familiarity and use of distributed and transformational leadership styles

This section sought to explore the familiarity of distributive and transformative leadership amongst participants. After exploring the different styles of leadership that participants are familiar with, I saw it necessary to probe further to explore the knowledge and familiarity that participants have of distributive and transformative leadership in schools to answer the first research question on carrying their roles to manage environmental education curriculum that is multidisciplinary.

Ms Nkosi, a subject advisor, expressed her unfamiliarity with the concept of distributed leadership *“although I do not know”, “I have never heard that there is such leadership”*. However, she further mentioned that *“but by listening to the terminology I understand it”*. According to Ms Nkosi distributed leadership can be described as *“the leadership where you distribute your work to other people”*. Ms Nkosi further noted that *“(she) think that is the one we use most of the times, where we distribute most of the work so that even if a person is in the classroom, you know that person is a leader”*. In contrast, Mr Mofolo, a subject advisor, stated that he has applied distributed and transformational leadership *“yes to some extent we have practiced them”*. According to Mr Mofolo a *“distributed leadership is where we give them some autonomy”*. Mr Mofolo further elaborated that they apply distributed leadership to some extent according to what is prescribed, *“like I said, they can make decision on their own to some extent because there are things that are prescribed that you cannot change and there are sometimes where they can make decisions on their own in terms of distributed leadership”*. The participant then described transformational leadership as *“to transform the outcome, to get a new outcome in terms of education not just delivering curriculum even learners’ certificates”*. He further mentioned that the application of transformational

leadership begins from them *“as leaders as we aspire and inspire them, we hope they inspire and motivate learners as well”*. Similarly, Mr Mthunzi, a principal, mentioned that he is *“very much aware of distributed leadership”*. He further stated that *“when you talk about distributed leadership, a part of instructional leadership is distribution because that where you decentralise your powers to the individuals”*. The participant mentioned that as you decentralise your powers followers need *“to be monitored”*. Mr Mthunzi further argued that to apply distributed leaders, monitoring needs to take place and *“to do this, they submit reports to me”*. In corroboration, Mrs Mkhize, a principal, mentioned that she is familiar with distributed and transformational leadership *“yes, I delegate some powers to the deputy principals”*.

However, Mr Mkhungo, a teacher, seems to differ as he mentioned that *“I am not familiar with distributed and transformative leadership here in our school, not at all”*. The participant further mentioned that *“I would say that even delegation from the principal does not take place. You find that, while I am teaching, the bell rings and learners goes out of the classroom without me knowing as a teacher that the periods will be shortened”*. Likewise, Mrs Chetty, a teacher, stated that *“yes, I am familiar it just that the words are new to me”*. The participant further mentioned that *“In the environment we are in, we are familiar with delegation even in the committees we are in and other things you do, people have to learn from you and you work together”*.

In this section, the participants seemed to be in contradiction with what they shared in the preceding section 5.3.1.2. When they mentioned that they are familiar with distributed leadership, and they have used it. However, in this section I have found that participants are unfamiliar with the concept of distributive leadership. In their description of distributed leadership, participants classified distributing as delegation. I have also found that the understanding of distributed leadership amongst participants is that when distributing roles, as a leader you give your followers *“some autonomy”* and not a complete platform to explore and learn. I also found that participants relate distributing to delegation.

c. Ways to distribute roles to school stakeholders which effect transformation.

This section sought to explore how school stakeholders distribute roles to effect development and transformation within the institution. I decided to probe further to understand how

distribution of roles affect transformation among stakeholders, as my view is that the distribution of roles should drive stakeholders to transformation.

Ms Nkosi, a subject advisor mentioned that *“when I am distributing roles, I say within the groups, although everyone is a leader in the group, there should be clusters from different circuits”*. She further mentioned that the cluster leader *“is more of a coordinator whom they will come to with different topics which they will explain if like saying, this is the topic which people are struggling with, so they will have someone who will say I understand this topic better and guide other people”*. In corroboration, Mr Molofo, a subject advisor noted that *“we got cluster leaders in each circuit”*. The participant further mentioned that to effect transformation *“we empower them, then they empower people within their cluster. The cluster leaders are teachers, so they come to me”*.

Mrs Sydney, a principal, mentioned that when they distribute roles, they *“look at individuals since they are not the same”*. To effect transformation, the participant stated that *“we delegate duties, but management duties we delegate to the SMTs”*. Similarly, Mrs Mkhize also mentioned that when distributing roles *“it depends because as a curriculum manager, I have to interact with the HODs”*. To effect transformation, she stated that *“I delegate at that particular time, maybe to ask them to do something or supervise something where it is lacking where I pick up that there is something wrong. In terms of the curriculum, I as a principal, this is how we do it, I monitor deputy principals, deputy principals monitor HODs and HODs monitor teachers. We have two deputy principals; one is responsible for curriculum management and the other for discipline and other things”*. Mr Kim, an HOD mentioned that when they distribute roles, they *“look at the major subjects”*. The participant further stated that to effect transformation *“we choose subject heads, the ones with experience then we give them duties since they are experienced so that they assist others who are not experienced. But in other things we just select randomly, in terms of distributing duties like classroom educators”*. Mr Knowles, a deputy principal, stated that when distributing roles *“it depends on the time, maybe which role needs to be fulfilled at that time”*. To effect transformation, the participant further stated that *“we look at the strength of an individual if he/she do one or two, then you give him/her those roles to perform”*.

Mr Mkhungo, a teacher, stated that in his school roles *“are distributed in a certain way, even though they are distributed, but protocol is not followed”*. The participant further stated that *“for example, you do not know who is responsible for certain things. So, I would say that leadership is autocratic because things are done in a manner in which “someone” have thought will be right at that time.* To effect transformation, the participant further mentioned that in his school *“if something has to be done, he will tell an individual that this is what needs to happen right now. Sometimes, we are told that maybe there has to be a meeting prayer for the matric class on Thursday and then come Thursday, the matric prayer meeting does not take place, and no one will inform us why it did not take place”*. In contrast, Ms Khumalo mentioned that *“yes the roles are distributed to us”*. The participant further argued the reason roles are distributed to them as subject heads *“Because you find that, the HOD maybe of science and is not familiar with one of the subjects that falls under science subjects. So that why they need a subject head of that particular subject to help the HOD”*.

Based on the responses of participants there is an indicative of insufficient application of the concept of distributive and transformative leadership in schools. There is no clear evidence of the knowledge of the concept of distributive and transformative leadership. Many respondents were unable to indicate how they adopt distributed leadership to effect change in the schools. But they shared alarming information on the exclusion of other leaders when distributing roles.

Based on the results of theme 1 that was based on answering the first research question i.e. what is the role of school principals, school management teams (SMTs), teachers and departmental officials in managing environmental education curriculum? the findings pointed that there is no understanding of leadership, but rather what a leader has to do. Participants were unable to describe a leader, but instead they outlined the responsibilities of a leader which to them the leader's roles as a description of a leader. I also found that participants were exposed to a certain set of leadership styles, and they were not well informed about distributive and transformative leadership. Under theme 1, the findings also pointed the insufficiency of the application of distributive leadership which might results to no transformation as some leaders are excluded from leadership roles. This means that for theme one, some leaders are not given the platform to carry their roles in their full potential because some leaders feel like they are doing others a favour when they involve them into leadership.

Again, leadership roles are not clearly understood in the schools. Rather the focus is to managing work, rather than leading the people in the institution. To answer the research question, the roles of school stakeholders are not clearly outlined when it comes into leadership. Their understanding of leadership is only within the boundaries of managing teachers and learners work while the concept of leadership goes beyond that.

5.3.1.2 THEME 2: IMPEDIMENTS OF DISTRIBUTED LEADERSHIP WHEN MANAGING CURRICULUM IN SCHOOLS

This section aimed to explore the challenges that are posed by the application of distributed leadership in managing environmental education curriculum or curriculum. The curriculum of environmental education is embedded into the curriculum of other school subjects. Subject advisors, principals, SMTs and teachers shared their own challenges that they have experienced and the opportunities that they feel like distributed leadership and environmental education can present to improve the education sector. This theme aimed to answer the second research question, what are the challenges and opportunities of school principals, department officials, teachers, and School Management Teams (SMT) in achieving distributed leadership in the management of environmental education curriculum?

a) Challenges of curriculum management through distributed leadership

This section sought to explore challenges of managing curriculum through distributed leadership. It is important for leaders to understand the process of curriculum management. In this research, exploring the challenges of curriculum management could help the department of basic education to investigate strategies that can present solutions for such challenges.

Mrs Sydney, the principal, stated that “*curriculum management is a vast subject, it is not easy. It will always have challenges*”. She mentioned that the challenge with managing curriculum is that “*teachers do not prepare*”. The participant further noted that teachers do not submit their work to the HODs because “*teachers undermine HODs, especially HODs who comes from other schools to join our school*”. Mr Mthunzi, the principal, noted that their challenge is that “*the department expects us to cover that stipulated amount of work within a given time, how we do it is our problem that is our challenge*”. The participant further

mentioned that another challenge in their school is, *“the evidence to shows that (teachers) have taught is impossible to bookkeep, because they are concentrating on going to the classroom and making copies to be given to learners and now their work as teachers is suffering in terms of keeping evidence, because they only concentrating on teaching. Mr Mthunzi argued that the application of “curriculum management is not done appropriately because paperwork is too much”.* Mrs Mkhize also mentioned that *“yes! there are challenges”.* She further mentioned that their challenge is that *“some HODs are scared of teachers”.* The participant argued that the application of curriculum management becomes a challenge when *“you find that the HOD is scared to call a teacher, sit him/her down and show/tell them that they are behind for two weeks and ask how the teacher will cover the work. Some HODs are scared to hold accounting sessions with teachers because a teacher has to account if he or she is behind”.*

Ms Khumalo, a teacher, described her challenge as, *“when I came, it was difficult because when I was asking how far teachers have gone with learners, no one had information. I literally had to start from scratch, and it was difficult. Even those who were teaching Natural sciences had nothing to offer me.* She further mentioned that in order to manage the curriculum, *“there was little assistance, if any. I had to find my way”.* Mr Mofolo, a subject advisor, listed the challenges that he has identified as, (a) *“one of the challenges is too much content to be taught in a limited time, very little application”.* The participant further mentioned another challenge which is (b) *“uninteresting content, “teachers should be teaching something that is interesting to them and learners”.* Mr Mofolo argued that another challenge that he has identified is that (c) *“district focuses on Matric results”.* However, the participant did not only mention the challenges but also suggested the application to meet the shortcomings of curriculum management by, (a) *“I think the amount of content should be lessened and the amount of acceleration of application on society, where environmental education has practical implications on society”,* (b) *“you can take the same topic, but you can make it very interesting to learners”* and (c) *“Nationally, my view would be to restructure how we teach”.*

Based on the results, curriculum management is clouded by challenges that hinders the effectiveness of managing curriculum. The findings of this section pointed that curriculum management is a challenge itself. Another challenge was the lack of preparation of teachers

when it comes to planning their lessons and lack of respect amongst colleagues. Another challenge was the recognition of HODs time prescribed by the department to cover the content and bookkeeping of evidence that teachers have taught. Another challenge was curriculum management because of too much paperwork and HODs fear teachers and there's no support from other teachers and the management. Another challenge is that too much content to be taught which is uninteresting. The department of basic education focuses on Matric results and not the quality of teaching and learning.

b) Maintenance of communication without raising conflicts when distributing roles

This section aimed to explore how communication is maintained while distributing roles to all stakeholders without raising any conflicts in the institution. The participants raised different ways in which they maintain communication. In their response, Ms Nkosi who is a subject advisor mentioned that when communicating one needs to be careful of *“the manner of approach”*. The participant further mentioned that when distributing roles, she *“encourages communication among stakeholders that as a departmental head you cannot say this is what needs to be done or maybe in your management file this is how things should be done. But you need to call a person and sit her down, then you listen and they share their ideas on how things should be done. You cannot just call for their files on Wednesday, tell them why Wednesday is convenient for you”*. Mr Mofolo, a subject advisor mentioned that *“think as professionals, as we work with teachers who are qualified and on the field we need to maintain a professional communication. The participant further mentioned that communication is maintained, “in various ways. I communicate with teachers when I make a school visit. In monitoring school visits another way that I communicate with them is through a telephone or telegram or WhatsApp groups”*.

Mrs Sydney, a principal mentioned that they communicate, *“during briefings in the mornings, we request teachers to work with us”*. The participant further mentioned that *“it is difficult because people are not the same, others will take it well, others you will see that they are not okay. But anyway, they have to conform”*. Mrs Mkhize mentioned that she *“always prefers if the deputy principal is the one who assists the HODs so that I do not end up going over the deputy principal”*. The participant mentioned that communication is maintained *“through*

protocol which is immediate supervisor (HOD) must intervene and then the next person (deputy principal) on the hierarchy, then lastly it is me (principal) ”.

Mr Knowles, a deputy principal, stated that *“HODs communicate with staff”*. The participant further argued that *“usually we would bring matters to the deputy principal, because those are part of his duties to go and negotiate with the office”*. Mr Knowles elaborated that *“decisions are taken by the SMTs which is made of a principal, deputy principal and HODs”*. Ms Khumalo mentioned that communication is maintained through *“the principal informs us on the briefings of what needs to happen. She tells us what they have discussed with subject heads and SMTs and then she issued a circular”*. The participant further mentioned that *“they communicate through a circular that moves around, and you have to sign it to acknowledge that you have seen it. So far there are no conflicts and no complains”*.

Based on the results of this section, participants indicated that it is important to manage healthy relationships. Transparency has also been mentioned to be vital in the leadership of the school. However, in these schools, there seems to be a criterion to be followed when communicating with all school stakeholders.

The findings of theme two indicated that the process of curriculum management is a challenge and that the curriculum is managed through monitoring teachers and learner’s work. Teachers also do not seem to prepare for lessons prior to conducting them which interferes with monitoring of their work by HODs. The issue of insufficient support from other stakeholders at the schools seems like a major hindrance to curriculum management. Another challenge revealed by the findings is the issue of the curriculum being more content-based and uninteresting to teachers. The findings also pointed that in the schools more focus is given to students in Grade 12 as the interest is into getting excellent results and recognition at a national level. The findings pointed that there is an issue of transparency. Lastly, a criterion seems to be adopted by stakeholders when communicating and distributing roles to other school stakeholders.

5.3.1.3 THEME 3: EFFECTIVE STRATEGIES TO MANAGE SCHOOL CURRICULUM

This section aimed to explore the effective strategies that successfully contribute to distributed leadership in schools to manage environmental education curriculum. This section presents the may/or adopted by school stakeholders to distribute roles for managing environmental education. Theme three aimed to answer the third research question, what strategies, contribute to successful distributed leadership in schools to manage environmental education curriculum?

a. Strategies that school stakeholders adopt to manage curriculum in the schools.

This section explored the strategies adopted by stakeholders to manage curriculum in schools. The participants only referred to the monitoring of teachers and learner's books in terms of managing curriculum. Some also referred to how the learners were taught in different days during the Covid-19 pandemic. In their responses,

Ms Nkosi, a subject advisor, mentioned that one of the strategies to manage curriculum is to *“allow teachers to participate which gives you opportunities to get to know them better when you give them a role to play”*. The participant further mentioned that she applied the strategy of giving teachers opportunities when she had a double barrel meeting schedule. This strategy worked when she *“called two teachers to the office, I asked them to go and coordinate the workshop and I gave them the materials I was going to use”*. Mr Mofolo, a subject advisor differed as he mentioned that in his leadership, he *“adopts a buy in strategy”*. The participant further mentioned that *“if you come up with strategies to manage the curriculum and the teachers do not buy it, they will not do it. First, I show them how it can work for them”*.

Mrs Sydney, a principal, mentioned that to manage curriculum, *“there are resources that we use such as the one called a management or mentoring tool”*. The participant further stated that in application of the strategies to manage curriculum, *“we have HODs (we call them departmental heads) those are the ones managing the curriculum and then a deputy principal manages the departmental heads work, then the principal manages a deputy principals work”*. Mrs Kubheka, an HOD stated that the strategies to manage curriculum involves checking, *“teachers and learners work, on weekly basis, we have a circle of three days, one*

day is for submissions and that how we also submit to the principal". The participant further mentioned that when they apply curriculum management, they "sit down and plan lessons and activities have to be the same, even if we are five but our work does not have to differ, it has to be the same". Mr Kim, an HOD, stated that "the only way to manage the curriculum is through what we are given by the department, then it depends on how we amend it because you have to check, the lesson plans, curriculum coverage, written work of learners to see if they have written enough work for a week, then it depends on what we have agreed on as a department". The participant further mentioned that when they manage curriculum, "(teachers) submit lesson plans every Tuesday, then we check curriculum coverage monthly". Mr Mkhungo, a teacher mentioned that "the way they manage curriculum, they focus mainly on the ATP so the ATP is what we use. In terms of work, we know the amount of work we need to cover". The participant further mentioned that they, "submit files to the HODs so that they assess how far we have gone with work, comparing learner's books and ATPs".

The results presented in this section indicates that participants use different strategies to manage the curriculum. The participants mentioned that to manage curriculum, they prefer to use role play where teachers are given opportunities through role play. Another strategy is the monitoring of teachers and learners' books.

b. Understanding of the concept of environmental education.

This section aimed to explore the depth of knowledge that participants have of environmental education to manage the curriculum of environmental education. In their responses,

Ms Nkosi, a subject advisor describes environmental education as being *"about caring about the environment that is my understanding"*. The participant further mentioned that the application of environmental education is *"covered in technology on the three specific aims of technology, in specific aim number three which addresses technology, society, and the environment"*. Mr Mofolo, a subject advisor, mentioned that *"my understanding of environmental education is when people in a society are given knowledge or are aware that whatever they do affects the environment around them, it affects natural habitat around them"*. The participant further argued that *"in particular, Natural Sciences is the subject that*

gives you the print topics in which we interact with the environment and how we do it or how we teach it we try to integrate different topics”.

Mrs Sydney, a principal, mentioned that *she is “aware of environmental education, but these are some of the things you get when you read, not because you have been informed about them”*. Similarly, Mr Mthunzi, a principal, mentioned that he *“understand environmental education a bit, but I am not sure to what extent”*. The participant describes an environmental education at a school level as where *“learners are being taught even ways to save water and electricity, that if there is no need they should not light electricity”*. The participant mentioned that to apply environmental education in their school, *“we have an environmental committee. The environmental committee do not only take care of the environment, but when we are talking about the environment, we mean not just the infrastructure, but even learner uniforms, how they wear their uniform, the school ground, to ensure that there is no litter, classrooms and toilets are clean”*. Mrs Mkhize, a principal, mentioned that *“yes! I know and we do have an environmental committee”*. The participant further mentioned that to apply environmental education they *“give people a chance to come up with ideas which we make the environment safe in the school and conducive for teaching and learning. Learners are part of the committee”*.

Mr Knowles, a deputy principal corroborated with Mr Mthunzi by stating *“I do not have clear knowledge, but there is a committee which looks at the environment and staff”*. The participant further mentioned that *“we have not been able to integrate it or implement it as part of the curriculum for now. But I will not lie, the committee is not effective”*. Mrs Kubheka, an HOD differed as she mentioned that *“I do not want to lie to you, I do not know. As much as I have a child who did BSc, I had to go to the university to ask them first”*. The participant further stated that *“we do have an environmental committee here in the school that we call Qhakaza and land care. I guess the term is just new to me”*.

Mr Kim, an HOD, seemed confused instead of answering the question he asked a question *“what are we referring to about environmental education? After explaining what environmental education is the participant then mentioned that “almost all the subjects have environmental education, as in technology they talk about litter and natural sciences they talk about digestive system”*. Ms Khumalo, a teacher mentioned that *“I do not know what to*

say about environmental education, but most of the times we try to incorporate nature with our subjects". The participant further mentioned that "in Natural sciences normally we make learners aware that plants are living, recently in grade 8 we were doing an experiment where they were taking a leaf that produces starch, and how is that beneficial to human beings". Mrs Chetty, a teacher in her response mentioned that "Yes! I am a bit aware, as I remember yesterday when we were talking about pollution". The participant further noted that "what is important is that we also have to take care of the environment, so that the environment is also good to us". Mr Mkhungo, a teacher, mentioned that "yes! I am aware of environmental education". The participant described environmental education as, "it is about getting within the environment, learning from the environment, what are the positive and negative things we do to the environment, and what could be the impact of our behaviour to the environment". The participant mentioned the application of environmental education is through "educational learning I remember about the environment and we were at the river doing a river clean-up". The results indicated that school stakeholders understand environmental education in the spectrum of environmental. In their descriptions they only concentrate on the awareness of environmental issues.

c. School stakeholder roles in implementing and managing environmental education.

This section aimed to explore the extent of understanding that the participants know of their roles with environmental education curriculum implementation and management. In their responses,

Ms Nkosi, a subject advisor appeared confused when she was asked about her roles in the implementation and managing of the environmental education curriculum. She stated "let me just ask, this environmental education, is it just to make people aware? Teaching them about the environment?". The participant further mentioned that "my role in managing curriculum would be to ask and invite teachers to come with ideas or give them different suggestions to manage environmental education". Mr Kim, an HOD mentioned that his role in managing environmental education curriculum is that of "an overseer". The participant further mentioned that his role is to "distribute and those who are in charge of implementing the curriculum have to report to me". Ms Khumalo, a teacher described her role in implementing and managing environmental education as "to make learners aware and for them to see how

you as an individual treat the environment". The participant further mentioned that her role *"as a teacher is to treat the environment the way you would want learners to treat it"*. Mr Mkhungo, a teacher, corroborated with Ms Khumalo as he mentioned that *"as a teacher I need to make learners aware of environmental education which means everything that I teach"*. Mr Mkhungo further elaborated that to apply his role *"I need to mention that by giving them an extract that talks about an environment, maybe pollution and climate change, since we sometimes talk about those topics, what causes it and how can we reduce it, what role can we play as human beings to reduce the impact of pollution and climate change"*. Based on the results, school stakeholders seemed to classify themselves as only the overseers and not as people who are responsible for implementing and managing environmental education.

d. Empowerment of school stakeholders to freely participate in decision making concerning curriculum issues.

This section aimed to explore how far distributed leadership is practiced in empowering the staff to deliver and freely participate in decision making concerning curriculum issues.

Ms Nkosi, a subject advisor mentioned that to empower school stakeholders *"I always encourage them to talk"*. Mr Mofolo, a subject advisor, mentioned that *"in terms of the curriculum development, even I do not participate because it is done on National level, so curriculum is given to us. We do not have a say"*. The participant further argued that *"sometimes they would ask for suggestions, that how people participate this comes in a form of what they call a green paper, something like that, where they invite suggestions"*. Mr Mthunzi mentioned that to empower staff *"we have micro political structures what we call committees"*. The participant further mentioned that *"here in school we have a committee that we call the "Change Team" those are people who bring change into the school. Those people are found from all stakeholders, it is made of teachers, SMTs, Non-teaching staff and gateman, all people responsible for changing the school"*. Mr Knowles, a deputy principal, stated that in their school they hold *"departmental subject committee meeting where we discuss curriculum matters on how to assist each other"*. The participant further mentioned that they *"hold internal workshops per subject, we workshop them on how they implement everything they have learnt from the university and how to manage learners in the*

classroom”. However, Ms Khumalo, a teacher mentioned that *“I am not empowered to make decisions”*. The participant further mentioned that *“mostly, I lay low and listen to the older teachers and experienced on the field and do as told”*. In support, Mr Mkhungo, a teacher mentioned that *“we are not empowered at school, but by the workshop conducted by the district in terms of teaching. I can say that is where we get empowerment”*. The participant further mentioned that *“but in this school, there is not much support because you request things and you find that it is not provided”*. Based on the results of this section, some participants mentioned that they are not empowered in any way, when some empowerments do take place, it is when the department hosts workshops for teachers in the subject matter.

e. School stakeholders working together to achieve the same organizational goals.

This section aimed to explore the relevance of the organizational goals to environmental education and whether staff is working towards the same goals and to what extent.

Ms Nkosi mentioned that the most important goal is the one we say that *“(a) a learner has to learn when he/she goes to school and (b) the teacher needs to teach and there has to be evidence that the teaching and learning process has taken place”*. The participant further mentioned that *“because when speaking we say we are working towards the same goal, which is teaching and learning but the evidence is a 50/50 sometimes it becomes a disaster, you go to the schools and you came back as if you were running a marathon because of what you have found in the schools”*. Mr Mofolo, a subject advisor mentioned that their goal is *“to get more learners choosing science”*. The participant further mentioned that *“science is lacking and there are very few people that graduated in terms of science at school level and in university level. So, yes! some are working towards it but not all”*. Mrs Sydney, a principal, mentioned that their goal is *“strengthening our curriculum and improving our Matric results”*. Mr Mthunzi, a principal, stated that *“one of the goals, short term goal is that a school is supposed to be a working environment. A school has to be functional”*. The participant further mentioned that *“we are moving towards making our school a smart school, having smart classrooms and also our school to be a technological center where learners get to be educated about technology innovations”*. Mrs Mkhize, a principal supports Mrs Sydney as she mentioned that (a) *“this year, we said as much as we have experienced teachers, we wish they mentor the young ones even if they will not be given many classes, but they should*

be allocated grade 12 classes so that they work together”. (b) “our goal this year as a school is to get 100% matric pass”.

Mr Knowles, a deputy principal, mentioned that every year *“we set how we want our learners to perform”*. The participant further mentioned that *“then come up with strategies for them to perform better or that we wish to reach in terms of their performance. We do that through putting them on black and white”*. Mr Kim, an HOD stated that *“mostly, in high school the main focus is on learner performance of Grade 12”*. The participant further mentioned that *“we have an effective effort as a whole, as teachers in making sure that we produce good results”*. Ms Khumalo, a teacher mentioned that *“I do not know any goals in the meantime”*. The participant further mentioned that *“I have it in my file, but I have not gone through them”*. Mr Mkhungo, a teacher stated that *“I can say we do have goals, but I am not sure because there is no transparency, and it is not explicitly. The participant further stated that “if we can maybe open somewhere and look for them, we would find them. So, for them to be applied or implemented effectively, every beginning of the year, they should be communicated”*. Mrs Chetty also mentioned that *“some goals are communicated, some are not. But if you ask about other things you find that it does not really involve us as teachers”*.

Based on the results, the school stakeholders do not seem to be working towards the same goals as some participants mentioned that they are not aware of any organizational goals as some are not shared with them.

5.3.2 Evidence from Observations

The purpose of this section is to answer the third research question what strategies contribute to successful distributed leadership in schools to manage environmental education curriculum? under theme three to triangulate the results of the interviews. This section presents the observation results. In this section I will present the results of what I observed on the field. I observed the kinds of relationships that exists between the school stakeholders, and how environmental education is incorporated into the curriculum.

5.3.2.1 The kinds of relationships that exist between the school stakeholders

This section sought to explore the kind of leadership and management relationships that prevails in schools to allow for the management of environmental education through

distributed leadership. During observation, I wanted to observe the kind of behaviour that allows distributed leadership in schools since participants mentioned that they have applied distributed leadership.

a. Descriptive of the observed behaviours

Observations in Case one and Case three:

My observations were that *“the relationship that prevails in Case one and Case three is very hierarchical”*. I observed that the, (a) *“principal give orders or directly communicate with the members of the SMT (Deputy and HOD). Then a Deputy principal communicates with the HODs and then the HOD communicates with teachers in matters of curriculum management.* (b) *“I observed a dysfunctional and co-dependent relationship among the staff as I was at the school and even during conversations with some of the participants. They were very careful with their words, and some even said that they do not want to be seen as bad mouthing their fellow colleagues”*. (c) *“It also seemed that even though they work together, there is so much disagreements in terms of how the school should be managed and by whom. School politics seems to prevail at the schools”*.

Observations in Case two:

Case two was somehow different from the two above mentioned cases.

In this school I observed a *“manager/direct report relationship”*. I also observed that, (a) *“Here the staff has the allowance to report straight to the principal”*. (b) *“I observed order from the principal’s side, I managed to understand this through my interactions with him. When I came to the school, I approached an Admin Clerk who asked me to wait for the principal, this resembled order for me, and the principal called me to his office which was very neat and organized. I explained what my research is about, and he went and made copies of the permission I received from the University and the Head of Departments (KZN). He then asked me to follow him to seek permission from the participants. I would say, this really stood out for me”*. (c) *“I observed how the principal was approaching the other school stakeholders. To me they seemed as if they did not have a choice but to cooperate. We firstly approached the HOD responsible for curriculum management. I was not aware that there are schools that have someone who is directly responsible of curriculum development and*

management. The participants were very welcoming and easy going. The HODs directed me to the relevant teachers who I was to work with. (d) I also observed that there were also different committees that work hand in hand with the principal which is made up of teachers, SMTs, parents, and non-academic staff. Every school staff is represented at these committees. The school also has an assembly devotion timetable where teachers rotate to take turns or roles. I view this approach as a form of distributed leadership.

In these three schools' different relationships exists and the schools are led differently. The observed behaviour meant that the strategies applied at schools differs from leader to leader. There is no standardised guide on how schools should operate, everyone is doing what they deem fit at that particular time. This indicated that the strategies to manage the running of the schools should be synchronized. In order to have effective schools, strategies needs to be in place and this should not be dependent on the context as all schools needs to operate at the same levels, to offer the same level of education to all learners.

5.3.2.2 Incorporation of environmental education by teachers in their classroom teaching

This question aimed to explore how teachers incorporate environmental education in their teaching in the classroom. Teachers were observed during the teaching of the topics that were associated with environmental education. Two teachers were observed while teaching. Observations were carried in two schools because the third teacher was not available for the third observation and then I ended up observing two in two different schools. I believe I obtained sufficient data for the purpose of answering this question.

In case one, Mr Mkhungo performed an experiment for Starch to test how starch is produced. In case two, the topic taught by Mrs Chetty is Ecosystems (Balance in Ecosystems).

a. Descriptive of the observed teaching and learning methods:

In case one, I observed that *“Mr Mkhungo was using a learner-centred approach and teacher-centred approach inter-changeable in the classroom. During observation, I noted that while teaching, (a) “the teacher was asking questions and learners were very responsive and engaged in the teaching and learning process”. (b) “another thing that caught my eye was that the teacher was the demonstrator and learners were observers. (c) “the teacher also*

involved the skill of language incorporation as he also required learners to read for themselves". While in case two, I observed that *"Mrs Chetty showed more knowledge of the subject matter and was able to use learner-centred approach"*.

b. The observed pedagogical knowledge of the subject matter:

I observed that, *"Mr Mkhungo seemed to be very confident and mindful of this environmental scientific aspect"*. During the observation, I noted that while teaching, (a) *"Mrs Chetty checked prior knowledge of learners concerning ecosystems"*. (b) *"Language of teaching and learning is IsiZulu as mother tongue of the learners and also code switching from English to IsiZulu"*. I then observed that in terms of understanding the content *"Learners showed knowledge concerning the processes of the ecosystems. Learners were also responsive and engaged in the learning process"*.

c. The teaching material observed:

I then observed the teaching materials that were used by Mr Mkhungo to incorporate environmental education. The observation pointed that, (a) *"The devices used during to incorporate environmental education in this lesson was a copy taken from a textbook in the school, the teacher used old missionary way of teaching where the chalkboard and a textbook is the only mode of teaching"*. (b) *"I observed that during this lesson, the teacher prepared an experiment project that was going to be conducted in class. The materials used were leaves, electric kettle, alcohol (ethanol), water, white piece of tile, saucer, tweezers, test tube holder, two glass breakers and test tube rack"*. (c) *"after the observation of the experiment demonstrated by the teacher, learners were issued a worksheet of practical assessment copies to test the skills developed. The teacher was also open on taking questions and to assist where needed"*. I observed that the teaching materials that were used to incorporate environmental education by Mrs Chetty, (a) *"were a chalkboard and textbook as means of teaching"* (b) *"The teacher used the board to write what the discussion was about and to write the notes on the discussion in class"*. (c) *"The teacher was very mindful of the fact that there were learners that were taken for disciplinary. Notes were written on the board"*. (d) *"The teacher also gave learners an activity to complete which I viewed as informal assessment"*. I observed that *"the lesson was based on environmental education topic as ecosystems involves teaching learners about their surroundings"*.

d. Teaching classroom environment observed:

During the observation it was my view that, *“Even though the Mr Mkhungo did not incorporate outdoor education, but the teacher was able to take the outside world and introduce it into the classroom through examples”*. I observed that the state of *“the classroom had not enough ventilation and no ceiling boards which for me was disturbing as environmental education also comprises health education. The class was not clean at all, while in my knowledge, learners should be taught about cleanliness and it has to be maintained and demonstrated to them first”*.

Lastly, during the observations in Mrs Chetty’s classroom I noticed that (a) *“the classroom has no charts on the walls, but the room has enough light and ventilation. The floor of the classroom is not tiled”*. (b) *“The lesson was 35 minutes long. The classroom comprised the old missionary desks where learners have to sit by two or three”*.

The observations conducted in these schools pointed differences in the culture and infrastructure of the school. One of the schools had better infrastructure than the other. The running of the school was different than that of the two other schools. There seemed to be no synchronised manner in the running of the schools.

The findings that emerged from the observation indicated that there is no consistency in the results of the interviews and what I observed in the field. The observed behaviour indicated that there are hierarchical relationships that seems to prevail in schools. This type of a relationship has a potential to hinder the functionality of distributed leadership. The findings of the classroom observations indicated that teachers do try to incorporate environmental education in the classrooms but the lack of classroom resources seems to cripple the implementation of environmental education in schools. Learners only learn about the terms related to the environment and examples made by teachers. To me such lessons are interesting to the teachers and learners as earlier mentioned by Mr Mofolo during interviews.

5.3.3 Evidence from Document analysis

In this section, I analysed the Curriculum Assessment Policy Statement document of Natural Sciences in the senior phase, referring to existing environmental education content after interviews with relevant stakeholders and observations. I produced questions that will be

answered by document analysis for the purpose of answering the third research question. The purpose of analysing the CAPS was to assess the depth of the environmental content to allow for the integration and implementation of environmental education.

5.3.3.1 Integration of environmental education in natural science education

This section aimed to explore how environmental education was integrated into natural sciences education. I chose natural sciences as a subject to be analysed because I believe that natural sciences is complemented by environmental education. Whatever touches science has everything to do with the environment. To answer the first document analysis question, I explored the aim of a curriculum in a learner's life. Firstly, I wanted to understand the aim of CAPS, natural sciences and how these aims resonate with the aim of environmental education and how these aims promote practicality. I then compared the three aims.

a. Comparison of the aim of the curriculum, NS and environmental education

In the natural science CAPS document the three aims are described as follows,

CAPS aim: The general aim of the curriculum is that “*the National Curriculum Statement Grades R-12 gives expression to the knowledge, skills, and values worth learning in South African schools*” (DBE, 2003a). This curriculum aims to “*ensure that children acquire and apply knowledge and skills in ways that are meaningful to their own lives. In this regard, the curriculum promotes knowledge in local contexts, while being sensitive to global imperative*” (DBE, 2003a). However, the natural science aims are as follows, (a) “*Specific Aim 1: ‘Doing Science’*”, (b) “*Specific Aim 2: ‘Knowing the subject content and making connections’*” and (c) “*Specific Aim 3: ‘Understanding the uses of science’*”. The application of the aims involves (a) “*learners should be able to complete investigations, analyse problems and use practical processes and skills in evaluating solutions*”. (b) “*Learners should understand the uses of Natural Sciences and indigenous knowledge in society and the environment*”. The aim of environmental education is clearly to “*show the economic, social, political and ecological interdependence of the modern world in which decisions and actions by different countries can have international repercussions*” (UNESCO, 1978). The aim of environmental education is to “*help to develop a sense of responsibility and solidarity among*

countries and regions as the foundation for a new international order which will guarantee the conservation and improvement of the environment” (UNESCO, 1978).

The results of this section indicated that the aim of CAPS is to ensure that the skills and knowledge acquired by learners so that they can apply them in a meaningful way. While the aim of natural sciences is to get learners to do science and understanding, the use of science was conducted mostly in the lab rooms. However, the aim of environmental education is somehow different from the two as the aim is to show the interconnectedness of the environmental, social, economic, and political. There is a link between the aims of the CAPS, natural sciences and environmental education. But it is not clear how and to which extent these aims are fulfilled within the context of natural sciences.

5.3.3.2 Integration of environmental education in the curriculum

In this section, I aimed to explore how environmental education is integrated in the curriculum of natural sciences. It was imperative for this research to analyse the CAPS document of natural sciences to understand the depth of the integration.

a. Environmental education link with natural sciences:

In this section, I sought to explore the link between the content of environmental education and natural sciences. I have analysed the CAPS document and found that the integration is through the infusion of environmental topics into the curriculum of Natural Sciences by drawing a link between Indigenous Knowledge Systems and Natural Sciences content. While analysing data, I have discovered that, *“in the fundamentals of environmental education curriculum, the application of indigenous knowledge systems is important as citizens developed ways to live in this world.*

The application of environmental education in the CAPS documents reference has been made in page 8 that with **Indigenous knowledge systems and Natural Sciences**, (a) *“Our forebears would not have survived if they had not been able to learn about the natural world they depended on (Department, 2003a: 8)”*. (b) *“They made careful observations, recognised regular patterns in seasons, the life cycles of plants, and the behaviour of animals”*. (c) *“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”. (d) *“Indigenous knowledge includes knowledge about 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”.*

Based on the results of this section, there is a link between the aims of CAPS, natural sciences and environmental education. The integration of environmental education has taken place through the integration of indigenous knowledge systems and natural sciences. The preservation majors that were put into place by our forefathers fall under environmental education.

5.3.3.3 Environmental education implementation in the natural science

According to my knowledge, when we refer to implementation we are talking about the teaching and learning of a particular subject or content knowledge. So in this section I have analysed how teaching and learning of natural sciences is supposed to take place with the idea of integration of environmental education content into the curriculum of natural sciences education by making reference to the classroom observations that I conducted in two schools.

a. Description of the teaching and learning process in the natural science:

In this section I sought to explore how teaching and learning of natural sciences is expected to take place. As stated in the CAPS document, the teaching and learning process of natural sciences involves *“careful selection of content, and use of a variety of approaches to teaching and learning Science should promote understanding of* (a) *“natural sciences at the Senior Phase level is said to lay the basis of further studies in more specific Science disciplines, such as Life Sciences, Physical Sciences, Earth Sciences or Agricultural Sciences”.* (b) *“prepares learners for active participation in a democratic society that values human rights and promotes responsibility towards the environment”.* (c) *“natural sciences can also prepare learners for economic activity and self-expression as part environmental education practicality” (DBE, 2013a).*

b. The role of teachers and learners in the teaching and learning process

I then further explored the role of teachers and learners in the teaching and learning process of natural sciences as described below. This was imperative in this research as it can help us determine whether teachers and learners know their roles. This is important for feasibility of the teaching and learning process of environmental education within natural sciences.

c. Description of the role of learners:

As stipulated in the CAPS document of natural sciences the role of *“learners are required to read and write particular genres of texts (including instructions, reports, and explanations) during Natural Sciences lessons (DBE, 2013a)”*. The CAPS document clearly outlines that *“learners need regular opportunities to read and write a range of genres in order to improve their reading and writing skills and the ability to read and write well is also critical when learners are assessed both informally and formally (DBE, 2013a)”*.

d. Description of the role of teachers:

The role of teachers as outlined by the DBE (2013a) *“teachers need to ensure that resources are available for teaching and learning”*. According to the DBE (2013a), (a) *“Teachers should ensure that a system is in place for recovering textbooks at the end of every year and schools must provide secure storage space where textbooks, and other equipment, can be stored safely”*. (b) *“Teachers should ensure that learners are familiar with rules regarding the safe use of equipment. Schools must make every effort to ensure that the essential equipment is provided”*. (c) *“Teachers should remember that it is more important for learners to have the experience of carrying out a variety of investigations than to depend on the availability of equipment”*. (d) *“In instances where equipment is limited, teachers should be encouraged to improvise. The same knowledge and skills can be developed using improvised equipment”*. (e) *“In instances where there is no alternative, it is more effective for teachers to demonstrate an investigation than not to do investigations due to a lack of equipment”*. (f) *“Teachers have the freedom to expand concepts and to design and organise learning experiences according to their own local circumstances”*.

In this section, the link is demonstrated between environmental education and natural sciences. However, the roles of teachers and learners does not inform the teaching and

learning process. From the CAPS document, I did not comprehend how environmental education is promoted through the application of teachers and learner's roles.

5.3.3.4 Ways of managing environmental education curriculum in the natural science curriculum

Curriculum management is comprising many functions in the school. But the core business of curriculum management in schools is the teaching and learning process. Curriculum management is about curriculum improvement and effective implementation. In this research, a few curriculum managers associate the process of curriculum management with the aim of examining the extent of learning through assessments. In this section, the aim was to explore how assessments serves as strategies to manage environmental education curriculum in the natural sciences as a subject. Through document analysis process, I firstly explored the purpose of assessment to see whether it has any links with curriculum management.

a. The purpose of assessment

In the CAPS document, an assessment is described as *“a continuous and planned process of identifying, gathering, interpreting, and diagnosing and informing about the performance of learners”* (DBE, 2013a). The application of assessments *“involve generating and collecting evidence of achievement; evaluating this evidence and using this information to understand and thereby assist the learner's development and the teaching process”* (DBE, 2013a). In the CAPS document there are two types of assessments namely,

(a) Informal assessment is described as an assessment that *“consists of regular checking of learners' class work (including practical tasks) asking questions orally and giving constructive feedback. Marks for informal assessment need not be recorded”*. The purpose of informal assessment: *“is to continuously collect information on a learner's achievement that can be used to improve their learning. Informal assessment is a daily monitoring of learners' progress”*.

(b) Formal assessment is described as an assessment that *“consists of selected assessment tasks, the marks of which should be recorded formally. These assessment tasks are done throughout the year and include tests, selected practical tasks or investigations and examinations. All marks that are recorded formally contribute to the final year mark”*. The

purpose of formal assessment *“is to provide teachers with a systematic way of evaluating how well learners are progressing in a Grade and in a particular subject”*.

In the CAPS document of natural sciences, assessment is a strategy to manage the curriculum taught to learners. Therefore, learners do formal and informal assessments in which formal assessments are recorded and informal assessments are not. However, it is not clear how these assessment helps to manage the curriculum of environmental education.

5.3.3.5 Evidence in curriculum documents to enable environmental education in pedagogy

In this section I aimed to explore the evidence in a curriculum document to enable environmental education in pedagogy. Looking at the four strands of Natural Sciences from the CAPS document, one would say, yes! there is evidence that the environmental education pedagogy is enabled.

a. Description of the organisation of the natural sciences curriculum

The Natural Sciences content is organised using four knowledge strands (DBE, 2013a). In my view, such content promotes environmental knowledge or awareness. The four strands comprise (a) *“Strand 01: Life and Living”* which incorporated environmental education content in its context. (b) *“Strand 02: Matter and Material”* this part comprises more of the scientific content but it also touches on the environmental/natural content in the context of the topics. (c) *“Strand 03: Energy and Change”* looking at this strand, the content is mostly based on the scientific content as well but the environmental aspect is also introduced and explored. (d) *“Strand 04: Earth and Beyond”* This strand is also a bit of both scientific and environmental as learners are taught about the things they already know and what they have not seen These strands are applied to the annual teaching plans from DBE (2013a) *“which is a guide for teachers in terms of the topics they have to cover for the week until end of each term”*.

b. The implication of these strands is:

(a) **Life and Living**- in my view the purpose of teaching learners about life and living should result in a society who lives a transformed life in behaviour and application of knowledge and skills acquired in these lessons. (b) **Matter and Materials**- in my view the importance

of teaching learners about the processes of solids changing into gas and liquid will help learners make sense of all the matter or material they see around them. (c) **Energy and Change**- these lessons should teach learners about various kinds of energy around them, their pressure changes and how they change in different situations. (d) **Planet Earth and Beyond**- in my view these lessons teach learners about the earth in which they live, other planets and how human behaviour distorts the planet's wellbeing.

Based on the document analysis, the findings indicated that environmental topics are incorporated into the curriculum of natural sciences. But these topics focus more on the scientific part. Learners are taught about the descriptions of the environmental topics and what causes each of those environmental issues but ways to mitigate through practical implications are not the focus.

5.3.3.6 Strategies that can contribute to the success of environmental education curriculum management

This section aimed to explore if there are any strategies in the CAPS document that contribute to the successfulness of the environmental education curriculum management.

a. Description of the strategy:

In the CAPS document there seems to be one strategy that contributes to the curriculum management of environmental education which is through doing assessment.

Application: On the analysis of the CAPS document, there seems to be one way/ strategy of managing environmental education curriculum which is through assessments which are informal in nature, and which are mostly theoretical.

The findings of document analysis indicated a gap in the curriculum content of natural sciences to cater for environmental education. As much as environmental topics are taught to the learners, they do not have an output at the end of the learning process. The topics are scientific. The curriculum document only explores one element of environmental education which is to raise awareness and not on implementation outputs after raising awareness.

5.4 SUMMARY OF THE CHAPTER

This section presented the results of the data collected from the field through interviews, observations, and document analysis. The results of the interviews supported the observations, although some results were in contradiction. More of these similarities and differences will be further discussed in the following chapter with relevant literature to support the findings.

6. REFLECTION OF THE RESEARCH FINDINGS

“Our goals only can be reached through a vehicle of a plan, in which we must fervently believe, and upon which we must vigorously act. There is no other route to success”

Pablo Picasso¹

6.1 INTRODUCTION

Picasso’s (n.d) quote is in line with the current research as it stresses a need to have a plan on how the curriculum of environmental education should be driven and the process of managing the curriculum of environmental education. The quote from Picasso is relevant to the current research as the research focuses on strategies to manage environmental education through the employment of distributed leadership. Without any strategies in place, it might be difficult to reach our goal of having a vibrant, stable environment and economy. The discussion of findings is a platform where presented results are discussed against existing literature and contribute to the body of knowledge. The purpose of the discussion of findings is to interpret and describe the significance of one’s findings considering what is already known about the research problem being investigated, and to explain any new understanding or fresh insights about the problem (Hess, 2004). In the current chapter, I will discuss the results presented in the preceding chapter. The findings of this research give insight about the strategies of managing environmental education curriculum through distributed leadership in schools and could inform existing literature and methodology.

The findings to be discussed attempt to close the research gap that was identified and discussed in Chapter 1. I went on to expand the literature review to present evidence from the existing literature to answer the three research questions: (1) What is the role of school principals, school management teams (SMTs), teachers and departmental officials in managing environmental education curriculum? (2) What are the challenges and opportunities presented to school principals, department officials, teachers, and School Management Teams (SMT) in achieving distributed leadership in the management of environmental education curriculum? and (3) What strategies contribute to successful distributed leadership in schools to manage environmental education curriculum?

Stakeholders have a fundamental role to play in ensuring the successfulness of environmental education curriculum management. School principals, school management teams, teachers and departmental officials are the main individuals who are directly involved with the management of curriculum (Rasebotsa, 2017). In my view, stakeholders need to play their roles in terms of curriculum management for the success of the institution. In this research all the stakeholders mentioned in the beginning of this section are regarded as leaders. From the literature and results, themes and categories emerged to answer the following research questions.

As stated on the preceding paragraph, school stakeholders are the main catalysts for environmental education curriculum management. It was then imperative for me to assess the knowledge that stakeholders have in terms of leadership, how they see themselves as leaders and the practices they implement to lead. This question was asked to explore how they also prefer to be led by those in higher position to them. The theme that emerged from these results of this question was the description of leadership and the roles of a leader as discussed below:

6.2 THEME 1: DESCRIPTION OF LEADERSHIP AND THE ROLES OF A LEADER

Theme one focuses on the description of leadership and the roles of leaders. The theme derived from literature review in chapter three was informed by the responses of the participants. The purpose of this theme is to discuss how leadership and leadership roles are described in literature and how this theme informs the findings of the current research.

Leadership means the process of influencing people, so that their efforts are oriented toward achieving the goals of the organization (Meraku, 2017). Klingborg et al (2006) defines leadership as a process-oriented, non-specific practice of challenging the process, inspiring a shared vision, enabling others to act, modelling the way and encouraging the heart. Sharma and Jain (2013) also describe leadership as the art of influencing people to attain group objectives willingly. Further descriptions are provided in one of the categories. In chapter 3, the roles of individual leaders (subject advisors, principals, HODs and teachers) were described as “the roles of subject advisors is to help school principals and teachers to understand the curriculum” (Mthembu, 2014).

The role of the school management teams in curriculum management (principals, deputy principals, and HODs) is to manage the daily activities in the school (Subramoney, 2016). The role of the teacher in curriculum management is to determine which components of the curriculum to use in a specific lesson, whether they are new or ongoing (Alsubaie, 2016). Du Plessis (2005) mentions that the teacher also decides how much time to devote to developing fundamental abilities or critical thinking skills. According to chapter 5, the role of a leader is to provide guidance, communicate reliable information, work collaboratively and provide support. This will be discussed in the following sections as categories that emerged from literature and findings of the current research.

Below I discuss the categories in detail and support the findings from literature. The categories that I discuss are the roles of school stakeholders as curriculum leaders, the different leadership styles leaders use, distributive and transformative leadership and how they work towards ensuring fair distribution of roles amongst stakeholders as categories that emerged from the above discussed theme. Again, observations and document analysis were used to validate the responses of participants through interviews.

6.2.1 Description of leadership

To understand and give meaning to the results of the current research, it is important to reflect on literature regarding the description of leadership. As indicated in Chapter 2, Sharma et al (2013) define leadership as a process by which a person influences others to accomplish an objective and directs the organization in a way that makes it more cohesive and coherent. Leadership is process-oriented, non-specific practice of challenging the process, inspiring a shared vision, enabling others to act, modelling the way, and encouraging the heart (Klingborg et al, 2006). In the current research, the participants could not give a description of leadership. Participants failed to provide a description of leadership. In literature, this shortfall has not been recognized as I could not find literature that points to the failure to describe leadership by school's leaders. In my view, this could mean that either the understanding of leadership has not been explored in schools or there is a lack of knowledge regarding the concept of leadership. The lack of understanding of what leadership is may have a negative impact on how leaders perceive themselves in the school.

As mentioned above, during interviews even though participants were asked about the description of leadership, none of the participant gave me a description of leadership but they focused only on the roles of a leader. School stakeholders are aware of what they need to do but they do not understand who they are because their responses were only based on the description of the roles of a leader. Thus, these findings indicated that there is a problem with how leadership and management is understood at schools.

To school leaders it seemed as if being a leader and being a manager are two different things. The way school stakeholders are informed about their roles does not make them regard leadership and management as the same. My view is informed by the evidence from observations where school leaders seemed to understand how they need to manage the school as in case two. School leaders seemed to follow a manager/direct reporting strategy. However, they are unable to lead as they listen and do what is expected by the principal who is viewed as the school manager. Meraku (2017) notes that leadership is a vital management function that helps to direct an organization's resources for improved efficacy and the achievement of goals. As informed by literature, I can state that leadership is viewed as the first step that contributes to the management function (Meraku, 2017). In my view, this point means that you cannot manage if you cannot lead. I argue that if leadership is not understood, so is management not understood. Meraku (2017) further noted that regardless of your position, understanding the role of leaders can help you to contribute more meaningfully to the accomplishment of your company's objectives.

In this section, the preceding findings of the current research recommends that the DBE has a fundamental role to play in professional development where school stakeholders are equipped with more knowledge on leadership for the effectiveness of school management. There seems to be a gap in literature in terms of how leadership informs the management process. Can one be a manager apart from being a leader? Further research is recommended in this regard and an outlined process of leading the schools when managing environmental education curriculum are needed. This point motivates me to assess the understanding of the school stakeholder's roles as discussed below.

6.2.2 The description of the role of a leader

As mentioned above, when school leaders were asked to give a description of leadership they provided the description of the role of a leader. It is therefore necessary for me to give a description of the roles of a leader as provided in the literature. In literature, the description of the roles of a leader is to provide a vision for the company or institution (Meraku, 2017). Balcerzyk (2021) mentions that among the roles of a leader, protecting and guiding their followers is an example of extending his/her leadership impact. As indicated in Chapter 5 in the results chapter, the findings of the current research indicated that the roles of a leaders rely on *providing guidance, communicating reliable information, working collaboratively, and providing support*. Further discussion of the results is provided in the following subcategories.

6.2.2.1 Provision of guidance

Provision of guidance is a subcategory that emerged from the description of the roles of a leader category. This emerged from literature and from the results of the current research. It is imperative for me to focus on the subcategories as they have a potential to pave a way for leaders to understand their roles when managing environmental education curriculum in schools. In Chapter 5, Mr Mofolo and Ms Nkosi mentioned that a role of a leader is to provide guidance. In literature, scholars such as Juneja (2022) have mentioned that a leader must not only supervise but also play a guiding role to their subordinates.

Guidance here means instructing subordinates in the way they must perform their work effectively and efficiently (Juneja, 2022). The findings of this research indicated that provision of guidance is one of the significant roles of a leader. During the interviews it transpired that the subject advisor's description of a leader corroborated with the findings of the research as both subject advisors concentrated on a leader being able to guide subordinates. As published by the Meraku (2017) a characteristic of a true leader is to help others develop which is to push their team members to their full potential by offering support and guiding them to advance skills for the benefit of the organization. However, as earlier mentioned by Juneja's (2022), guidance is perceived as means of instructing the subordinates to perform their work effectively and efficiently. In contrast to Juneja's view, in my opinion, guidance has nothing to do with instructing, but guidance is helping someone to grow,

allowing them to make mistakes and to learn from them. Joseph (2014) affirms that leaders offer guidance to all members of the team to ensure that they are fulfilling their roles.

Guidance can include training and instructing team members and taking corrective or even punitive actions when necessary (Joseph, 2014). My view is in line with Joseph's perspective because when offering guidance, one should train rather than instruct. However, the findings of this research indicate that leaders believe that instructing their followers and making them account for mistakes is guiding them. In a saying by Benjamin Franklin, he mentioned that *"Tell me and I forget. Teach me and I remember. Involve me and I learn"* (Franklin, n.d.). Therefore, my view is informed by Benjamin Franklin that when followers are told what to do, they may forget but when they are taught, they might remember. This is a form of social constructivism theory which is one of the theories discussed in Chapter 2 and when they are involved they have the potential to understand what encompasses distributive and transformative leadership.

Joseph (2014) mentioned that guidance also involves responding to questions and resolving problems that can hinder job performance. Kapur (2019) mentions that it is the job of leaders to guide and direct the individuals in an appropriate manner towards the implementation of their tasks and functions, provide solutions to various types of problems and challenges, make effective decisions and create amicable environmental solutions, to facilitate the achievement of the objectives. In corroboration, the findings of the current research indicate that a leader needs to offer guidance that will lead to the successful achievement of an organisational goal as mentioned by Ms Nkosi in Chapter 5, in respect of environmental education such as the whole school approach to education for sustainable development (Hargreaves, 2008).

In this section, the findings of the current research indicated that participants understand that as leaders they need to give guidance to their followers, to guide them towards reaching the goals of the institution. Without guidance, people tend to be lost as they do not know whether they are moving in the right direction or not. Therefore, guidance is vital in leadership as it sets the record straight in terms of the roles of all stakeholders. However, in the current research it is not clear how leaders offer guidance to their followers when implementing and managing environmental education curriculum in schools. This section aimed to inform me about the status of leaders in understanding their roles as leaders in schools.

6.2.2.2 Communicating reliable information

Communicating reliable information is another sub-category that emanated from the category; description of the roles of a leader from the results of the current research in chapter 5 and literature. In literature, Luthra and Dahiya (2015) views effective communication as a vital aspect to a leader's fate. In support, Towler (2003) opines that the utmost essential key to great leadership is communication. In support, the findings of the current research indicated that amongst the roles of a leader is the importance of communicating relevant information. In chapter 5, Ms Nkosi mentioned that a leader must be bold enough to tell the truth even if it hurts sometimes. The participant raised a very important point in terms of communicating reliable information i.e., the information communicated must be truthful. Luthra and Dahiya (2015) regard leadership communication as inspiring and that which encourages an individual or a group. Systematic and meaningful sharing of information occurs through excellent communication skills. The response of Ms Nkosi supports the view of Luthra and Dahiya (2015) by stating that a leader does not force his/her opinions on people as he/she also needs to listen and suggest ideas to people.

But all the communication of truth and sharing of ideas must be done in a professional and systematic manner. In my view, communication is a form of motivation, passing on information, liberating and transforming the subordinates. My view is informed by the response by Ms Nkosi and Trucker and Russell (2004) when he states that the characteristic of a transformative leader is to influence, inspire and transform. These characteristics depend on effective communication. The view of Trucker and Russell (2004) and the findings of the current research are informed by a theoretical framework that is described in chapter 2. This means that leaders need to go beyond just being leaders who monitor the work of followers, but they need to be transformative leaders who communicate the vision of the organisation effectively. Kehr et al (2022) mentions that transformative leaders have great communication skills, and their messages are authentic, inspiring, and consistent which enables them to grasp their followers' attention during important organizational changes and new initiatives. It is my view that transformative leaders have the potential of influencing other leaders to transform the output. My view supports the response of Mr Mofolo in chapter 5, when he mentioned that as a leader he adopts a buy-in strategy to get co-workers to buy the ideas when introducing something new. In chapter 5 participants mentioned that usually communication

is facilitated through circulars in schools and from the DBE and this point will be discussed further in section 6.3.1.2. However, participants did not seem to view this way of communication as effective because they felt like there is no transparency as mentioned by Mr Mkhungo in chapter 5. Therefore, the findings of the current research suggest that there must be effective communicating channels. DiFranza (2019) mentions that effective communication requires transformative leaders to ensure that every member of their team not only feel comfortable enough to voice their opinions and share their innovative ideas but that their voice is actually heard. In support in chapter 5, Ms Nkosi mentioned that the leader needs to listen to the ideas of the followers.

Based on the findings of the current research, transparent and effective communication is important amongst leaders and their followers when managing environmental education curriculum through distributed leadership in schools. Therefore, the recommendation to the DBE would be to encourage transparency when these circulars are sent out to school stakeholders. Also, such circulars should not serve as dictatorship, but should leave a space for discussions and collaborations. It is my view that, if the DBE do not consider this, they might have school stakeholders think they are just employees and not change makers.

6.2.2.3 Working collaboratively

The findings of this research further indicated that another role of a leader is the ability to create an environment that allows him and her followers to work collaboratively. In support, DiFranza (2019) emphasises that transformational leadership is based on the idea that all employees should be working together towards a single, common goal within an organization. Therefore, literature suggest that it is vital that leaders create a collaborative environment in their workplace to accomplish a task (DiFranza, 2019). In my view, working collaboratively may involve different factors such as showing people the way as alluded by Mrs Sydney in chapter 5. Showing people the way can be achievable through role modelling as mentioned by Mr Mkhungo in the result chapter. Mr Mthunzi and Mrs Chetty mentioned that a leader should lead from the front. The results indicate that a leader should be hands on and not only oversee. In my perspective, setting a good tone for everyone is an important aspect of leadership. My view is informed by Qiu et al (2018); Hermalin (1998) and Potters et al (2005) who mentioned that leading by example has been considered as an effective way

to promote cooperation and improve group performance. In my view, role modelling fosters collaboration and I recommend that leading by example needs to be considered in literature as an element of transformative and distributive leadership. You cannot distribute a role to other people that you as a leader cannot carry. Therefore, for the current research it is imperative for an environmental education leader to possess the skills that they can impart to their followers. Again, in my view transformative leadership requires full understanding of a leader in the context of the environment and role to be carried. Transformational leadership style concentrates on the development of followers as well as their needs (Nanjundeswara & Swamy, 2014). It is my view that leading by example which is a form of collaboration develops people and serves as a mechanism to lead them to a desired goal of the institution. I believe that a leader can manage to transform other people's minds when their mindset has been transformed as well. This means that it is imperative for a leader to distribute transformative roles which will effect change in the lives of the followers and the institution's goal and vision.

In Chapter 5, Mrs Sydney also mentioned the importance of understanding people you are working with and understanding the environment in which you interact in. From the responses of a participants, I learned to understand that being a leader means you need to understand your followers. In literature, a leader who can understand his/her followers is viewed as an effective leader. However, Kellerman (2007) believes that it is long overdue for leaders to acknowledge the importance of understanding their followers better. From my understanding of Kellerman's belief, a leader needs to understand his followers, not just understanding but aim to understand "better". From an Oxford dictionary, "better" means more desirable, satisfactory, or effective. Maccoby (2004) emphasises that for leaders to lead, they need not only exceptional talent but also the ability to attract followers. Maccoby (2004) further state that followers are thought of as merely responding to a leader's charisma or caring attitude. It is mostly ignored that followers have their own identity. From the statement of Maccoby (2004) I suggest that it is the responsibility of every leader to discover such identity by working collaboratively with their followers.

In support, DiFranza (2019) mentioned that whether this means working in larger groups on projects very clearly tied to the achievement of that common goal or simply ensuring employees can see how their own daily work contributes to the greater goals of the company,

establishing these methods of collaboration early helps set the organization up for success. From the findings of the current research, I recommend that collaborations should be encouraged in schools, and not only in schools but within the department of basic education. Leadership should not be an individual responsibility, but it should be distributed across all leaders in the department for the successfulness of the institution. Failure to do this has implications such as not meeting the target goals, having unhappy members of the schools, having poor output and not quality education as expected by the fourth of Goal of Sustainable development which is the provision of quality education as discussed in Chapter 2. Fulfilling the expectations of the fourth goal of sustainable development will require working collaboratively.

6.2.2.4 Provision of support

The subcategory provision of support emanated from the literature and result of the current research. As mentioned in Chapter 3, one of the roles of a leader is to provide support to the subordinates. Literature suggests that a distributive leader should support change by improving schools (Triegaardt, 2013). Similarly, a transformational leader also provides support and encouragement to individual followers (Cherry, 2020). In support of Triegaardt (2013) and Cherry (2020), in Chapter 5, Mr Kim and Mrs Kubheka mentioned that a leader must be able to identify issues, understand the fruits of educating both a learner and teacher and lastly be accountable for decisions taken. The participant's points form the basis of providing support.

In my view, it is important for every leader to have the skill of solving problems because such leaders will have the ability to also recognise the kind of support that their followers will need to solve such problems. But for a leader to be able to solve a problem, participants mentioned that a leader must be able to identify problems/issues or conflicts first. Surji (2015) state that most importantly, a leader needs to listen to the concerns and problems of people and ensure they are addressed. This is needed to build real win-win affiliation between all parties involved. The findings of the current research indicate that a leader must be able to identify uncommunicated problems among staff members or institutional problems that may affect production.

The findings also indicated that another form of providing support to other school stakeholders is through a leader initiating healthy working conditions as mentioned in Chapter 5. Good relationships may be maintained through effective communication concerning the goal of the organization. This supports the second role of a leader as mentioned in above sections. In corroboration, Surji (2015) state that leadership is almost exclusively a communication activity. Indeed, effective leaders communicate clearly, promptly, empathically and they keep team members well-versed (Surji, 2015). In addition, Rosenbach et al (1996) state that real leaders “walk the talk” by delivering what they promise. As earlier mentioned by Ms Nkosi, effective leaders know people have a necessity to be heard (Surji, 2015).

However, for leaders to support each other, they need to understand their responsibilities as leaders. In this regard, Mr Knowles emphasizes the need for a leader to know his/her responsibilities. In support, Surji (2015) also mentions that the leadership factors that create impact are within the letters that form the word leadership. Among these letters R- stands for responsible which is an ability of a leader to take responsibility for actions (Surji, 2015). In my view, a leader is expected to be accountable of anything that happens among the teams that he/she is leading or rather to be accountable for anything that happens in the organization or institution that they are leading. In this case, stakeholders in the school needs to be on par with any curriculum developments.

Another important aspect that the findings indicated is the need of managing work and not people doing the work. This required support to be provided to other stakeholders to carry their responsibilities. Mr Knowles mentioned that managing people may sometimes become a problem. In support, Westfall (2019) in a blog entitled “Why Managing People Is Impossible: What Expert Leaders Do Instead” argue that leaders understand the true cause of the actions and the outcomes. Westfall (2019) further stated that managing people often turns into a game of amateur psychology, featuring a wonder-wheel of personalities, emotions, and misunderstandings. In corroboration, Jobs (2022) stated that management is about persuading people to do things they do not want to do, while leadership is about inspiring people to do things, they never thought they could. Jobs (2022) further mentions that the most important qualities of a good leader include integrity, accountability, empathy, humility, resilience, vision, influence, and positivity. To manage the unmanageable, the leader oils the squeaky

wheel (the most outspoken complainer) which I view as energy draining, because in the current research leaders are viewed as people who are responsible for motivating others to behave in an environmentally safe manner. But such transformation needs begin from the leader down to the follower. Just like motivation, an unmotivated leader cannot motivate others. This is more like this saying, “You cannot give what you do not have” which is more like “walk the talk” that was earlier mentioned by Rosenbach et al (1996).

The findings of the current research indicated the importance of providing support to all stakeholders. Without necessary support, the institution may be a sinking ship. Therefore, it is important for every leader to possess the energy of offering support and guidance to each other. However, from the findings discussed in this section, it is recommended that further research may be carried out to explore the kind of support that leaders should provide to school stakeholders for the success of education. Also, initiatives to give support would be beneficial in this regard. Failure to provide support may lead stakeholders into a confusing circle of not knowing what they should do. Also, such support should breed self and professional developments amongst school stakeholders.

In summary of this section, I have mentioned the importance for every stakeholder to understand their roles in an institution, it is even more fundamental to understand their roles in managing the curriculum of environmental education. Stakeholders do not understand their roles which makes it difficult for stakeholder engagement to be initiated. According to Sedmak (2021), stakeholder engagement is a process that organizations can follow to listen to, collaborate with or inform (or a combination of all three) their existing stakeholders. Stakeholder engagement helps organizations to proactively consider the needs and desires of anyone who has a stake in their organization which can foster connections, trust, confidence, and buy-in for the organization’s key initiatives. The findings of the current research revealed that relevant support is not given to teachers. Even though subject advisors, principals, head of departments and deputy principals provided insightful responses as to what are the roles of a leader, some teachers in their way of explaining their roles as leaders, gave a somehow unsure stance to whether they belong in the leading team or not. They sounded as if they do not fit in leadership and leadership is the senior management’s role only.

Some teachers disregarded themselves as leaders. In my view, when teachers mentioned the word “leaders”, I could see that they are referring to the principal, SMT and subject advisors, which is not true in the context of this research. The OECD (2008) gives a clear guide on who participates in school leadership. Teachers take formal roles and responsibilities for managing and leading in schools (OECD, 2008). Teachers are regarded as an important part of school leadership. Fullan (1991) mentions that teacher leadership is a strategy to lift a burden of leadership from individuals and distribute it throughout the community. In my view, involving teachers in the management and leadership does not only lift the burden of leadership from individuals, but it also improves the school and student performance. Teachers improve the school and student performance by helping to create an environment for learning that has influence throughout the school community and affects students and teachers alike (Lieberman & Miller, 2005).

In my understanding of the findings, teachers are usually excluded in leadership roles outside the classroom. It transpired from the findings of this research that teachers are viewed as curriculum implementers and nothing else beyond that. Consequently, teachers always feel like their role is to guide students through the understanding of the curriculum and other relations pertaining to the school, they need to hear from the management and only adhere to protocol laid by the management or the Department of Basic Education. Mr Mofolo also mentioned that even as subject advisors they do not have a say on the development of the curriculum. Even though sometimes they may be asked to send in their ideas, they are never considered. The panel of curriculum experts consider only their own ideas and implement them.

The findings of the current research indicate that the decision making of teachers is only limited to how they teach, because even what they teach are told through circulars. That is why, in their study, Jess et al (2016) recommended that teachers need to be primarily involved in curriculum development and the process of alignment as it pertains to knowing student needs, and then instructing accordingly. Goldberg and Houser (2020) opine that when teachers are viewed as implementers of curriculum they look into manuals and guides to drive the teaching each day. In my view this means that decisions pertaining to the classroom are made and taken by those not in contact and distant from students. Trust is placed on “experts” who have never met these students (Jess et al, 2016). Jess et al (2016) further state that if

teachers can be viewed as decision-makers, they would be able to look at their students as the guide for what to teach next. Trust will be placed on students and teachers to know what is best (Jess et al, 2016). In my opinion, even with the curriculum of environmental education, teachers seem to follow strict guidelines on how to teach environmental topics within the curriculum that mostly promote theory than practice.

As mentioned earlier in chapter 5, subject advisors, school principals, school management teams and teachers are responsible for curriculum management. But asserted earlier from the presentation of results, the above-mentioned stakeholders are not sure of their roles in managing the environmental education curriculum. The confusion seems to come from the fact that some stakeholders (subject advisors, principals, and SMTs) view themselves as superior to the teachers, therefore, they classify managing as monitoring how teachers work. This makes them exclude teachers in terms of curriculum management. For this reason, teachers do not seem to see themselves as curriculum managers/leaders because of the exclusion they experience. From the exclusion taking place in the schools, it is hard for the school stakeholders to understand their roles with environmental education curriculum management.

The roles of these stakeholders have been discussed in Chapter 3. In this research, the principals, subject advisors and SMTs understand their roles as curriculum leaders and lead by example. But the case is different with environmental education curriculum, when it comes to environmental education, they push the responsibility to teachers whom they do not regard as leaders when decisions are taken about curriculum management. Yet the OECD (2008) regards teachers as having the necessary right to carry their roles formally in the leading and managing of the curriculum in schools.

The findings of the current research identify a gap in literature to explore the development of environmental curriculum in schools from the national level down to the district level that directly interact with schools. There is a need for research to be conducted to evaluate the strategies in place to support the implementation and development of environmental education curriculum in schools. Therefore, even the DBE is encouraged to develop initiatives that promotes environmental education in schools and opening a door for suggestions and inclusion of all stakeholders for these initiatives. Failure to conduct further

research and implementation of environmental education initiatives might have implications such as prolonging challenges of stakeholder's disorientation when it comes to the curriculum of environmental education because it starts from understanding and acknowledging his/her role to take initiatives. It is also my view that this disorientation comes down from the National team to the local schools as there is no clear guideline of managing environmental education curriculum. Therefore, the closing remarks of the theme is that it is fundamental for leaders to understand their roles and of those working closely with them. All leaders need to embrace each other's roles for effective leadership in the institutions. Effective leadership not only guides but identifies, understands, and communicates the organizations vision to motivate others to support them to achieve objectives.

6.2.3 Different styles of leadership

To understand and give meaning to the results of the current research, concerning the different styles of leadership as a subtheme/category of theme 1, it is important to reflect on literature on the different styles of leadership. As indicated in Chapter 2 and 5, there are different styles of leadership. According to Yukl (2002), the term leadership itself projects images of powerful, dynamic individuals who command victorious armies, build wealthy and influential empires, or alter the course of nations. Stated succinctly, people commonly believe that leaders make a difference and want to understand why. Bass (1990) states that "leadership is often regarded as the single most important factor in the success or failure of institutions". Ogawa and Scribner (2002) assume that "leaders are largely responsible for school performance". Therefore, literature suggest that to ensure successful leadership in the schools, leaders adopt different styles of leadership. These include distributed leadership, transformational leadership, transactional leadership, democratic leadership, autocratic leadership, instructional leadership and so on (Burn, 1978; Bass, 1985; Gastil, 1994; Sharma & Singh, 2013; Achimugu & Obaka, 2019). It is important to note that different leadership styles apply to environmental education as they have the potential of clearly outlining each individual responsibility in managing environmental education in schools. The adoption of the different leadership styles may serve to bring order as every stakeholder will have a clear understanding of what is expected of them.

In this section I discuss the different styles of leadership that school stakeholders have been exposed to and the styles that they have adopted to lead. The findings of this research indicated that some participants are exposed to a series of leadership styles than others. Mr Mofolo and Ms Nkosi in Chapter 5 mentioned that they are exposed to many leadership styles. Regarding favourable leadership styles, participants hardly mentioned distributive and transformative leadership. In Chapter 5, the most popular leadership styles were democratic, autocratic, instructional and servant leadership styles. For the interest of the current research, it is important to note that some participants mentioned that they are exposed to many leadership styles, but they could not name more than two. Certain subcategories emerged from the literature and results from Chapter 5 and are discussed below.

6.2.3.1 Democratic leadership in the school context

The first subcategory that emerged from the results of different styles of leaders is democratic leadership in the school context. It is important for the current research to discuss the relevance of democratic leadership in schools as evidenced on literature and also indicated by the result of the current research in schools. In literature, democratic leadership is described as a situation where all policies are derived from group decision (Ogunyinka & Adedoyin, 2013). Ogunyinka and Adedoyin (2013) further state that the leader helps his co-workers operate as a group. This style is characterized by co-operation, acceptance of more responsibility and recognition of the worth of each worker. However, the findings of the current research inform us that democratic leadership seems to be more in favor from the presentation of results in Chapter 5, as leaders believe that it is important to be heard while you are listening at the same time. Ms. Nkosi mentioned that as a leader you need to be heard and you should listen to other people. Gastil (1994) mentioned that democratic leadership plays a key role in democratic movements. In support of this statement, Ms. Nkosi mentioned that she can relate democratic leadership to the liberation of our country. Democratic leaders offer guidance to group members, participate in the group and allow input from subordinates (Sharma & Singh, 2013). In my view, democratic leadership seems to give some autonomy for partaking in decision making. Democratic leaders delegate authority to followers and give ongoing support and focus for the challenging works (Sharma & Singh, 2013).

From the responses of subject advisors and the HODs, these leaders believe that democratic leadership is the only leadership style that favours equality in the workplace where they are presented with opportunities to be heard. Gastil (1994) mention that democratic leadership is termed as the most effective leadership style. Democratic leaders have confidence and trust in their people (Sharma & Singh, 2013). In schools' democratic leadership is believed to offer the potential to overcome the weaknesses that the other types of leadership such as autocratic leadership tend to develop. A democratic leader ensures that all members of the community are involved in the decision-making process, but participation will vary depending on the context. When issues arise and decisions must be made, relevant and varied participants are involved to discuss the situation and a majority view is taken as the final decision (Sharma & Singh, 2013). As much as Mr Mofolo spoke of collegial leadership, the way he described collegial leadership he seemed to be referring to democratic leadership. When he stated that there are decisions they cannot take because they are guided by the scope of their work, this favoured an element of democratic leadership that participation can vary depending on the context. The findings of the current research are in contradiction with the view of Sharma and Singh (2013), when he mentioned that democratic leaders have confidence and trust in their people. The findings of the current research as also informed by literature that indicate that this democratic of leadership only involves followers in partial decision making and not in its fullness (Sharma & Singh, 2013). Therefore, distributed leadership seems be a better leadership style to be adopted in schools as this leadership promotes sharing of responsibilities and not only involvement in decision making. The results indicated that there was a link between democratic and distributed leadership. Hence, in the next section I discuss why it is prominent to apply distributed leadership rather than democratic leadership.

6.2.3.2 Distributed leadership over democratic leadership

The success of any organization depends upon the way in which the leader operates within the organization (Ogunyinka & Adedoyin, 2013). Leadership styles are factor that determines the work effectiveness as well as that of its leader (Ogunyinka & Adedoyin, 2013). As mentioned in Chapter 2, distributed leadership is one of the leadership styles that have been given momentum in schools (Kilicoglu, 2018). The findings of the current research indicated that school leaders are more exposed to democratic leadership than distributed leadership. School leaders believe that democratic leadership may be effective for leading the schools.

However, the findings of the current research indicated that the participants preferred democratic leadership because democratic leadership is the leadership that they have witnessed to be effective at schools and they are not exposed to distributed leadership. I believe that distributed leadership maybe more effective than democratic leadership in schools.

My belief is informed by Bell et al (2003) who in their review on democratic leadership, concluded that on the impact of school head teachers on students' outcomes, mentioned that distributed leadership might be more likely to have an effect on the positive achievement of student's outcomes than that which is largely or exclusively top-down. However, Delgado (2014) asserts that distributive leadership fits within the collective and democratic approaches. According to Bell et al (2003) and Delgado (2014), distributed leadership is still given momentum over democratic leadership as distributed leadership offers a more collective platform. In support, Kilicoglu (2018) states that the idea that leadership need to be distributed to be most effective in enhancing learning in schools gains a powerful momentum in leadership studies. As much as other leaders spoke of different kinds of leadership styles, all of them were in favour of democratic leadership in their explanations.

Authors such as Saadi et al (2009) believe that schools and communities with democratic values and devolution of power can easily provide a sound ground for adoption of distributed leadership. In support of Saadi et al (2009), I believe that the school stakeholders may not struggle with the management of environmental education curriculum management if distributed leadership may be introduced in their schools with a solid background of democratic leadership as they will be granted a platform to distribute roles democratically amongst each other.

6.2.3.3 Implications of autocratic leadership in schools

The second subcategory is the implications of autocratic leadership in schools. I saw a need to discuss the implications of autocratic leadership in schools as spelt out in literature and from the findings of the current research in Chapter 5. In literature, an autocratic leadership is described as a management style wherein one person controls all the decisions and takes very little input from other group members (Dyczkowska & Dyczkowski, 2018). Autocratic leadership styles focus on dominating attitude and as such do not recognize opposing or

competing views (Achimugu & Obaka, 2019). The findings indicated that in school, autocratic leadership dominates. I found what teachers stated as conflicting with what subject advisors and principals mentioned as they expressed being in support of democratic leadership. In Chapter 5, Mr Mkhungo and Ms Khumalo mentioned that they are exposed to autocratic leadership in their schools. Mr Mkhungo further mentioned that in their school there is no transparency as the principal does what he deems right at that time. In support, Ms Khumalo mentioned that in her school, the principal would ask for their suggestions but at the end the SMTs will do what they decide upon. In support of the findings, Achimugu and Obaka (2019) state that with autocratic leadership, no opportunities are provided for alternative views or interest other than those defined by the authoritarian leader as legitimate. Autocratic leaders do not delegate responsibilities and they are always alienated from their subordinates (Achimugu & Obaka, 2019).

The implications of autocratic leadership are that autocratic leadership often engenders anger, frustration, despair, and in extreme cases withdrawal from school activities (Achimugu & Obaka, 2019). In Chapter 5, Ms Nkosi mentioned that sometimes you can see that your supervisor is being autocratic, while as a leader you need to listen and people to listen to you. In my view, when leaders employ autocratic leadership they hinder success within the organisation as followers withhold the information, they have which could be of help to the institution's success. Therefore, this type of leadership style affects effective teaching and learning (Achimugu & Obaka, 2019). For instance, Ogalo (2013) pointed out that principals who apply autocratic leadership have lower cooperation with their teachers in terms of lesson preparation, use of teaching aids, and effective classroom teaching and as such tend to produce lower student achievement in any subject. The findings are in line with Ogalo's point as in Chapter 5 Ms Nkosi and Mr Mofolo mentioned that teachers do not prepare for lessons which shows resistance from the teachers. In support Mrs Mkhize mentioned that in their school they make teachers account for not accomplishing their teaching tasks. The findings indicate that school leaders are applying autocratic leadership and that results in teachers resisting to complete their tasks. According to Sharma (2008), the autocratic leader dominates members and uses unilateralism to achieve a singular objective and has little confidence in his subordinates and he/she distrusts them. In corroboration with Sharma (2008) the findings point those principals have little/if any trust on their followers. The findings are informed by

a response of Mr Mthunzi when he mentioned that as a leader you need to ensure that you do not allow your staff to do as they please, there must be a limit.

The autocratic style of leadership, which is sometimes called authoritarian style, is where the leader makes the decisions without the consultation of followers (Sharma, 2008). Mehta and Masheshwari (2013) postulate that the autocratic leader gets vested authority through the office more than from personal attributes. In support, Mr Mkhungo mentioned that in his school a principal consults a few people, and you see them implementing something that was not discussed with the whole staff. The autocratic leader seeks little group participation in decision-making as he makes all decisions and participants are required to follow prescribed procedures under strict discipline (Mehta & Masheshwari, 2013). Autocratic leadership style is considered as a self-centred, irritable, egocentric, non-cooperative and dictatorial type of leadership (Mehta & Masheshwari, 2013). This view is stressed by Grimm (2010) and Chukwura (2017) who suggested that the unusual and counterproductive leadership behaviours exhibited by autocratic leaders could lead to high staff turnover rates, decreased job satisfaction, decreased psychological well-being, low employee self-esteem and efficiency, anxiety, depression and decline in performance. Grimm (2010) and Chukwura (2017) suggestions were supported by the findings of the current research when Mr Mkhungo mentioned that because they follow strict guidelines, they end up teaching in class for the sake of doing their job.

The findings of the current research demonstrated that the school leaders lack understanding of what leadership is as they could not describe leadership. However, some school leaders seemed to understand the roles of a leader but not their roles as leaders. My point is informed by the responses of Mr Mkhungo, Mrs Chetty and Ms Khumalo who did not seem to regard themselves as leaders. The description of leadership and the roles of a leader pushed me to assess the understanding of the different types of leadership that school leaders know. The findings pointed that the school leaders know quite several leadership styles, but they favour democratic leadership and to me the findings pointed that school leaders are exposed to democratic leadership as an effective leadership style. Another leadership style that they are exposed to is autocratic leadership which seemed to prevail in most schools. Followers seem to experience autocratic leadership which pushes them to resist change and new implementations in the schools. From the findings in this section, I was then prone to assess

the knowledge and familiarity of distributive and transformative leadership in schools as school leaders hardly mentioned distributive and transformative leadership in their responses.

6.2.4 Familiarity with distributive and transformative leadership in schools

To understand and give meaning to the results of the current research, it is important to reflect on literature regarding the concept of distributive and transformative leadership in school. As indicated in Chapter 2, distributed leadership means mobilising leadership expertise at all levels in the school to generate more opportunities for change and to build the capacity for improvement (Harris, 2014). van Oord (2013) mentioned that in education, transformational leadership is described as a leadership style that teachers, deans, principals and professors can use to lead by example. It places a high value on creating community bonds, encouraging both students and educators to greater levels of achievement (van Oord, 2013).

The findings of current research revealed that there is lack of knowledge that school leaders have on distributive and transformative leadership. School leaders do not seem to be familiar with distributive and transformative leadership. The findings of the current research pointed that the school leaders want to convince themselves that they have been adopting distributive leadership while there is no sufficient evidence in their responses. From the findings, I noticed that participants refer to distributed leadership as delegation. In support, Mrs Mkhize mentioned that she delegates some powers to the deputy principal. Yet, in my view a principal and a deputy principal are on the same stream of power in the school. The role of a deputy principal is to assist the principal in the management of the school. In my view it is not for a principal to delegate “some” powers to a deputy principal, but they work together to accomplish goals set out for the institution. The findings of the current research revealed an act of power pull from the principals. Miller (2020) mentioned that principals should not make a mistake of assuming that their solutions are the best. Therefore, it is imperative for school leaders to distribute roles amongst each other.

Findings of this current research also indicated that participants refer to delegation of work to colleagues as distributing leadership. For example, Mrs Mkhize mentioned that she delegates some powers to the deputy principal. Bayfield (2020) have reported on the tendency of leaders to refer to delegation as distributed leadership. Bayfield (2020) stated that distributed leadership is about handing power to staff without just delegating unpleasant

tasks. Bayfield (2020) further argued that delegation can be an enemy of distributed leadership. Delegation says here is a task I do not want, can you do it for me? whereas distributed leadership says I am confident in myself and therefore will share power with you, I want to see you grow (Bayfield, 2020). The point argued by Bayfield (2020) has been supported by Ms Khumalo when she stated that HODs choose subject heads in order to help them with a subject they are not knowledgeable in or did not specialise in but still have to supervise.

The implications of the findings of the current research indicates that the unfamiliarity of school stakeholders with distributive and transformative leadership may contribute to the dysfunctionality of environmental education curriculum management at schools. Therefore, the findings of the current research recommends that the DBE should facilitate awareness programs to raise awareness and promotion of the two leadership styles in schools as they pose greater possibilities of a successful institution and management of environmental education. Lastly, the findings of the current research revealed that the school leader's "distribution" has limitations as school leaders are allowed to take or participate in decision making to a certain extent and not in complexity and this point is further discussed in the next category.

6.2.5 Distribution of roles to effect transformation

To understand and give meaning to the results of the current research, concerning the distribution of roles to effect transformation in schools as a subtheme/category of theme 1 following the familiarity of distributive and transformative leadership amongst school stakeholders, it is important to reflect on literature on the process of distribution of roles to effect transformation. As indicated in Chapter 2, it is important for school leaders to commit to models of distributed leadership in schools that establish a cadre of talented educators in each building who have end-to-end responsibility for the development of the teachers on their teams (Bierly et al., 2016). Bierly et al (2016) further mentioned that while many school districts and charter management organizations (CMOs) are investing in programs to develop more transformational leaders, there is rarely a plan in place to deploy these people effectively within an individual school setting. As a result, development efforts are fragmented, our

principals are overwhelmed, and teachers lack the support they need to progress as instructors in enough numbers to produce high-performing schools at greater scale (Bierly et al, 2016).

In Chapter 5, the findings of the current research indicates that delegations in schools which is referred to as distribution seems to be practiced to a certain extent and not in complexity. The findings of the current research indicate that there is unequal distribution of roles and no room for transformation and development. Liu (2017) mentions that unequal distribution could have a negative effect on production. In my view, it is a responsibility of a leader to create room for transformation, development, and growth (Mithal & Dhavle, 2022). In an institution where there is no transformation, a workplace becomes a place of pretence where staff members just come to do their job and then wait for their payday, but their passion is not valued. Llopis (2021) mentioned that employees are tired of being told what to do and just checking the box. Therefore, distribution of roles is imperative for transformation so that school leaders feel that there are active members to drive the institutions to meet its goal.

In Chapter 5, Mr Mofolo mentioned that they do what is stipulated by policy, they cannot deviate from it even if they allow staff to make decisions. Mr Mofolo's response indicated that the distribution of roles has limitations as they do not participate in decision making. The findings of the current research further indicated that even if teachers have better ideas, they cannot go against policy. School leaders listen to what they are told most of the time. But Llopis (2021) state that by always following the same corporate playbook, they have little room to grow and evolve as individuals. In my view, every individual likes to practice their own leadership tactics, make calculated mistakes and losses so that they learn from them. Llopis (2021) argues that employees and leaders want to do more, and they want their professional goals and those of their organization to be in alignment. Llopis (2021) further state that if today's leaders are responsible to guide business transformation, businesses should not define how leaders act, influence and create momentum in search of future growth. In this regard, I argue that if today's school leaders are responsible to guide education or school's transformation, the DBE should not dictate how leaders should act, influence, and create momentum in nurturing the future growth of the sector of education. Therefore, the DBE needs to give a room to school leaders to grow as individuals and grant an opportunity to influence their institution's future.

The findings of the current research further indicated that when roles are distributed (delegated) in schools there seems to be a certain criterion they use to select staff they will “distribute-delegate” roles to. Some colleagues seem to be left out on this development and transformation process. In Chapter 5, Mr Knowles mentioned that they look at an individual’s strength then they delegate duties. However, this criterion is not clear as to why it is used and how implication of this criteria used by the leaders in schools leads to other staff members being excluded. However, for the current research such exclusion may mean two things. Firstly, other school leaders may be excluded in leadership roles which pertains to curriculum development but be expected to lead environmental education curriculum. Secondly, some school leaders may exclude themselves in the management of environmental education curriculum as they may not consider themselves as responsible for such curriculum and as such place it on the shoulders of other leaders. The findings of the current research recommend further research to explore the reasons behind using these criteria and how individual strengths are assessed to deem an individual fit to accomplish a task delegated to them in schools. In my view, this criterion has a potential of creating favouritism within the workplace which may not be right for other school leaders. The findings of the current research also recommends that leaders in schools needs to encourage promotion of all stakeholder inclusion.

The findings of this section move me to then discuss the findings of observations to triangulate the information school leaders have shared pertaining to the management of environmental education.

6.2.6 Relationships existing in schools

To understand and give meaning to the interview results of the current research as discussed on the above sections under theme 1, it is important to reflect on literature on the kind of relationships that exists in schools. In literature, relationships are the cornerstone of many aspects of educational leadership (Lasater, 2016). In support, Northouse (2013) states that every situation involving school leaders requires some degree of relational behaviour. In Chapter 5, the findings of the current research indicate that a hierarchical relationship in the three schools prevailed, which is different in their nature. Hierarchical relationships are based

on degrees or levels of subordination and superordination. The superordinate term represents a class or a whole and the subordinate terms refer to its members or parts (Houseman, 2015).

Firstly, I would like to concentrate on a meaning of hierarchy as described in Wikipedia. Hierarchy is described as a group that controls an organization and is divided into different levels (Wikipedia, 2022). As mentioned in Chapter 5 by Mr Kim and Mr Mthunzi that principals communicate with the deputy principal, then the deputy principal communicate with the HODs and then the HODs communicate with the teachers. Therefore, Mr Mthunzi and Kim gave the impression that in schools the hierarchy is as follows

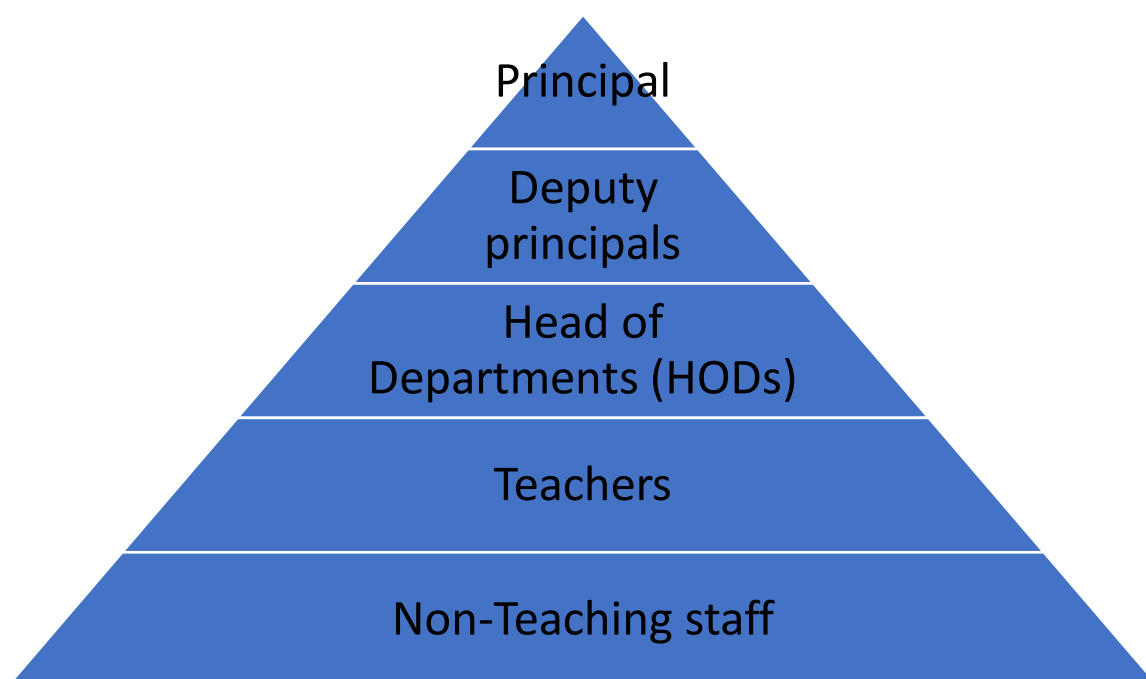


Figure: 6.1 Education Management and Leadership hierarchy (Buthelezi & Wolhuter, 2018).

The findings of the current research indicates that principals are the superordinate in the organization, they dominate and take decisions on behalf of all the staff. This view is supported by Ms Khumalo and Mr Mkhungo when they mentioned that principals take decisions for school staff. The deputy principals are usually the second in command in the leadership of others as indicated by Mrs Mkhize in Chapter 5. On the same hand, HODs take orders from the principal and deputy principals as mentioned by Mr Kim in Chapter 5, but they also view themselves as powerful. Teachers take orders from subject advisors who work in a district level, principals, deputy principals and HODs, even from parents as mentioned

by Mr Mofolo in Chapter 5. Likely, they have no say while non-teaching staff tends to take orders from everybody.

The above stipulated hierarchy process stemmed from the findings of the current research when I observed the leadership relationships in the three schools. Houseman (2015) argues that hierarchical positions make others view themselves more powerful than the other and it may hinder the process of self-development. My perspective is that when teachers are afraid to share their ideas or feel like their voices are not heard, these teachers become antagonists, people who resist change because they feel like they are not involved in the proposed or introduced change. In this regard, Mr Mkhungo mentioned that in his school he only teaches for the sake of doing his job because there is no platform for growth. Teachers need to feel needed and valued in the workplace.

Kellerman (2007) state that reporting relationships are shifting and new talent-management tools and approaches are constantly emerging. Therefore, my view is that a school should not be a hierarchical organisation that favours hierarchical relationships but an organisation that favours collaborative relationships. The findings of the current research further indicated that relationships in the workplace affect motivation among followers. Scholars such as Gagne and Deci (2005) have requested a closer examination of how leadership qualities and interpersonal styles of managers influence their follower's tendencies to align their personal goals to organizational goals. Literature points that power obtained from a bestowed leadership position influences leadership relationships between leaders and followers and those relationships have a major influence on inter and intra-personal motivation of leaders (Gauge & Deci, 2005). Vince (2014) argues that power relationships are inherently social and exist only in relation to others. Parties with low power rely on parties with high power to obtain rewards and avoid punishment.

From the findings of this research, as indicated by Mr Knowles the distribution of roles to staff is dependent on a follower's ability to do work or on individual capabilities or behaviour and sometimes an ability to perform work successfully. Those who seem to struggle are not given such opportunities for growth which means transformation is not encouraged. This means that only those who have already been transformed are given opportunities. To my

understanding, the school leaders are not interested in transforming others, but the focal point is to get work done successfully even if it is done by only one or two people.

The findings of the current research indicated that a hierarchical leadership relationship has implications. The implications of the hierarchy leadership relationship are a dysfunctional and co-dependent relationship among staff. This gave me the impression that teachers do what they are told to do for the sake of securing their jobs and not because they have an inherent passion for doing their jobs. From the findings of the current research, during the interviews it transpired that teachers are only expected to take orders from principals, deputy principals, and HODs and then be the ones having to deal with learners, curriculum change and implementations and report progress. Mostly, Mrs Mkhize and Mr Mthunzi mentioned that they ask the members of SMTs to supervise, and they only take the initiative when something is wrong. The findings indicated that the senior management only take initiative when something is wrong and when there is a need to discipline teachers.

This form of leadership has a negative implication on school leaders as they end up not understanding their role in terms of curriculum management as principals bestow curriculum management on the shoulders of a deputy principal. Others are not viewed fit to carry out this role. In schools, principals seem to delegate curriculum tracking to deputy principals and HODs and they classify curriculum tracking as curriculum management which is done through monitoring teacher's files/books and sometimes learners' books. However, for the interest of the current research there is no evidence that points how school leaders distribute roles of curriculum management in schools except tracking the curriculum coverage on teachers and learners' books. There is also no evidence on the school grounds of environmental education implementation as there are no functional environmental committee in these schools. The findings of the current research recommends that schools should have functional environmental committees. Moreover, the school environment should provide an indication that there is a functional environmental committee. It seems as if the hierarchical relationships in schools do not promote equal participation in the school programmes, but participation is limited to what principals, subject advisors and the SMTs deem necessary to include other staff.

However, the adoption of a hierarchical approach and the behaviour of leaders seem to be an organizational culture/the culture of DBE. In my experience, I have seen teachers running, sometimes breaking down in fear and stress just because a subject advisor has visited the school and calls for the teacher. Sometimes principals and the whole school staff are afraid because department officials have visited the school. This shows that the kind of relationships are based on faults or any shortfalls, there is no form of motivation. In support, Anderson, and Brion (2014) concur that as much as leaders in the workplace may reinforce their power through their own demeanour and behaviour, they are ordained with power in the organizational context (e.g., the authority to control resources, followers assigned to work under them) which includes higher-ranking small groups or strategic decision makers. The findings of the current research recommends that for effective curriculum management of environmental education, it is important to reconsider these relationships and delineate them and create healthy working relationships that do not favour some individuals over others.

6.2.7 Integration and implementation of environmental education in school

To understand and give meaning to the results of the current research, concerning the integration and implementation of environmental education in schools as a subtheme/category of theme 1, it is important to reflect on literature. As indicated in Chapter 5, the integration of environmental education in natural sciences as a subject taught in intermediate and senior phase of a child's school is stipulated in the Curriculum Assessment and Policy Statement (CAPS). It is important to draw a comparison between the three aims. All the aims promote knowledge acquisition, self-fulfillment and meaningful participation in society as citizens of a free country. These aims promote participation into the well-being of community affairs. Below I have drew a comparison of the natural sciences and environmental education,

6.2.7.1 A comparison of CAPS, natural science education and environmental education aims

I have decided to draw a comparison between the three aims to find out if there is a link between the three aims of CAPS, natural sciences, and environmental education. As mentioned in Chapter 5, the aim of CAPS is to ensure that children acquire and apply knowledge and skills in ways that are meaningful to their own lives (DBE, 2003a). The

natural science aims to ensure that students do science, know the subject content and make connections in science (DBE, 2003a). The aim of environmental education is to show the economic, social, political and ecological interdependence of the modern world in which decisions and actions by different countries can have international repercussions” (UNESCO, 1978). The aim of environmental education is to “help to develop a sense of responsibility and solidarity among countries and regions as the foundation for a new international order which will guarantee the conservation and improvement of the environment” (UNESCO, 1978).

The findings of the current research indicate that there is a link between the three aims. The aim of CAPS, NS and environmental education complement each other as CAPS aims to ensure that students acquire skills and knowledge that they can apply in their daily lives. Different authors discussed the relationships between science education and environmental education. Authors such as Panday (2002) discusses the relationship between environmental education and science education. Panday (2002) mentioned that the incorporation of environmental education into science education provides learners with learning experience that allow them to develop ecological foundations, conceptual awareness in relation to issues and values, investigative, and environmental action skills which all facilitate the translation of learning into action. On the same note, Brown (2001) described environmental education as an interdisciplinary field that is dominated by concepts found in the discipline of science. Brown (2001) further argues that the integration of environmental education with the teaching of science provides an ideal opportunity for promoting environmentally responsible behaviour. However, in literature there are no clear guidelines of how this "responsible behaviour” can be promoted within the current context of education. Furthermore, Brown (2001) emphasizes that the learning of science-based environmental concepts in isolation does not constitute environmental education, but rather constitutes the study of ecology.

Brown (2001: 1-8), further argues that by analyzing the human impact on the environment, the learning experiences fall into the domain of environmental science. However, it is only when learners can combine these environmental science experiences with investigative experiences, and community action skills that environmental education in its truest sense occurs (Brown, 2001). The findings of the current research indicates that the integration of environmental education in science education lacks the analysis of human impact on the

environment and this prevents the occurrence of environmental science experiences. Therefore, it is imperative to recommend that the integration of environmental education in science education should explore and encourage environmental science experiences and it should be localized to the contexts of African students.

6.2.7.2 The role of a teacher in the teaching and learning process

To understand how environmental education is integrated and implemented in school, it is imperative to explore the roles of teachers who are curriculum implementers as described by literature and the findings of the current study. As mentioned in Chapter 3, it is important for a teacher to understand the importance of knowledge in teaching (Beaton, 2010). In support, Celine (2013) mentioned that teachers play an effective role in imparting environmental education knowledge to children. The teachers can involve themselves in activity-based campaigns rather than giving mere theoretical and textual lessons (Celine, 2013). The activities for environmental campaigns should be practical and easy to understand (Celine, 2013). The findings of the current research indicates that in the CAPS document, the role of a teacher is to ensure that resources are available for teaching and learning (DBE, 2013a). It is a role of a teacher to ensure that a system is in place for recovering textbooks at the end of every year and schools must provide secure storage space where textbooks and other equipment can be stored safely (DBE, 2013a). It is important to note that the role of teachers as mentioned in literature and the results of the document analysis is not in sync. The role of a teacher as stipulated in the CAPS document does not place much emphasis on knowledge that teachers impart to learners. Yet the work of scholar's support knowledge acquisition and imparting of knowledge to learners.

I agree with Celine (2013) and Beaton (2010) concerning understanding the importance of teaching environmental education making it easier for teachers to understand the process of environmental education curriculum management. Since environmental education enables one to maintain his/her life, a teacher can create environmental awareness and help students to develop a positive attitude by shaping cognitive, affective and psycho-motor or cognitive domains simultaneously (Chaturvedi et al, 2014). In a nutshell, the curriculum management process is said to be fundamentally concerned with effective teaching and learning, and teachers play a significant role in this process (Du Plessis, 2005). As mentioned in Chapter

3, the management process consists of managing what learners are expected to learn, evaluating whether it was learned and seeking ways to improve learning. The findings of the current research indicated that the current role of teachers in schools is to teach content and facilitate assessments as a form of managing curriculum. According to Du Plessis (2005), student assessment is part of curriculum management. Assessments are important to hold systems and their key actors (notably teachers) are accountable for educational outcomes (Muskin, 2015). Assessments are also important in the teaching and learning of environmental education. However, the findings of the current research indicates that teachers give assessments to learners to manage the curriculum. As mentioned in Chapter 5, the analysis of the CAPS document shows that most of environmental education assessments are done informally. Furthermore, practical tasks are mostly done for informal assessment. When done for formal assessment, very little of knowledge is tested and they do not involve practical tasks. During document analysis, it transpired that the assessments do not add any value to a learner's life in terms of behaviour formation and development. The assessments are content based where learners are tested by writing an examination and there are no practical activities except a project in Grade 8 stipulated in a CAPS document where learners were expected to cut and design planets. In my view, such assessments have no significant value in character formation and behavioural change as an outcome of environmental education. How does designing planets inform behavioural change related to environmental issues? Therefore, such assessments make learners wonder about the significance of such content as it does not require any of their input and neither does it makes their lives better.

In rounding off the discussion under theme 1, I argue that the school stakeholders do not seem to understand their roles in managing environmental education curriculum because the curriculum of environmental education itself is not clear on the CAPS document. There are also underlying conditions that interfere with school stakeholders performing their roles, which is lack of support in the implementation and application of environmental education. Other conditions are the exclusion of other leaders in the management task and favouritism. The kinds of working relationships that prevails at the schools also hinder distributive and transformative leadership which is also not understood by the school stakeholder.

6.3 THEME 2: IMPEDIMENTS OF DISTRIBUTED LEADERSHIP WHEN MANAGING CURRICULUM IN SCHOOLS

Theme 2 focuses on the challenges of environmental education curriculum management. The theme was derived from literature review in Chapter 3 and was informed by the findings of the current research. Many scholars have reported the challenges of environmental education integration and implementation (Swan, 1969; Hudson, 2001; Bacon & Ziepniwski, 2017). As mentioned in Chapter 1, although the South African school curriculum advocates for environmental education, empirical evidence suggests that there are many challenges which hamper the implementation of environmental education in South Africa and other parts of the world. These challenges include the following: inadequate knowledge about the environment and environmental issues, lack of monitoring of the implementation of workshop processes in practice, inability to generate a whole-school approach for active environmental learning, lack of support on the part of school management in respect of the introduction of environmental learning into the curriculum, lack of support and assistance on the part of teachers in respect of the implementation of environmental education, lack of support materials, lack of funds with which to purchase learning support materials, lack of information from the curriculum development unit; attitudes of teachers, a lack of facilities, time constraint and inappropriate class size (Le Roux & Maila, 2004; Ketlhoilwe, 2003; Bacon & Ziepniwski, 2017; Ham & Sewing, 1988; Rahman et al, 2018; Joseph, 2014; Mathenjwa, 2014).

However, I am not aware of any research that has explored the challenges of environmental education curriculum management. The findings of the current research indicates that as much as there may be challenges, opportunities are also available to manage environmental education curriculum. Researchers have come up with opportunities for environmental education in schools (Marcinkowski, 2010; Cheng & So, 2017; Bacon & Ziepniwski, 2017). Theme 2 answers the second research question i.e., what are the challenges and opportunities for school principals, department officials, teachers, and School Management Teams (SMT) in achieving distributed leadership in the environmental education curriculum? Impediments of curriculum management and opportunities will be discussed in the following sections.

6.3.1 Impediments of curriculum management

This category sought to discuss the impediments of managing environmental education curriculum in schools. In literature, as mentioned in Chapter 3 curriculum management is described as a process whereby quality control of the taught, written and assessed curriculum occurs and results in an improvement in learner achievement (Lister & Cameron, 1986). Curriculum management is the management of a subject matter, its creation, packaging, and implementation. Curriculum management includes planning, developing, monitoring, and reviewing the educational program of the school to ensure a match with school goals and the appropriate allocation of resources (Kirk, 2014; Hogue, 2010).

In my view, curriculum management is important because it helps in serving the purpose of the institutions. It is therefore important to understand the process of effective curriculum management styles. Buleque et al (2020) opines that the process of understanding the effective curriculum management styles in primary schools is aimed at achieving quality basic education for sustainable development. My view is that it is not only important in primary schools, but in all levels of education such as primary, secondary and tertiary education. Buleque et al (2020) stated that curriculum management is the efforts that result in an outcome. In my opinion, one cannot see an output if there is no input. Considering the current research, it is impossible to manage the curriculum of environmental education without any inputs. The reasons why school stakeholders find it hard to manage the curriculum of environmental education is because they have not taken any initiative in the development and implementation of environmental education.

The findings of the current research pointed out that there are more challenges than opportunities of applying distributed leadership to manage environmental education. There are other underlying challenges that are still not addressed which are related to the curriculum management, let alone environmental education management which is not seen as important. As I mentioned in Chapter 5, it transpired from the results that the nature of curriculum management attracts challenges because of how the curriculum is developed, implemented, and managed. Mrs Sydney mentioned that curriculum management has several challenges. From the findings of the current research, the results indicated that the response of participants had nothing to do with managing environmental education because it clearly

shows that environmental education is not really a priority to them, but rather an extra-curricular which is not important. For example, Mr Mofolo, Ms Nkosi, Mr Mthunzi and Mrs Sydney to mention a few mentioned challenges coming from teachers not having evidence in their record files that they have taught or do lesson plans. Most challenges had everything to do with managing the record books of teachers in terms of what they are teaching in the classroom. This challenge can be associated with poor planning of lessons which may result to poor management of environmental education. From the results in Chapter 5, it transpired that environmental education is not given much attention as compared to the curriculum of other subjects. Phillips (2022) state that as much as environmental education is in the syllabus, teaching it is a battle. Phillips (2022) further state that with no clear direction on what integrated environmental education is about, research has found that teachers are at liberty to pick and choose topics despite having little exposure to environmental learning in the classroom and field.

In support of Phillip's arguments, in my view untrained school stakeholders have been expected to manage the curriculum of environmental education that they do not understand themselves. I am drawing this view from observations and the results from interviews when Mr Mofolo stated that he also as a subject advisor does not have control/say on the development of the curriculum because it is developed nationally. Therefore, this means that even the stakeholders who develop curriculum are untrained for environmental education, because more emphasis and directive would be placed in terms of the management of environmental education. This challenge pins on the transformative leadership theory. In my view, as a leader you need to be transformed yourself by the vision, so that those who are following should learn from you and be transformed as well. The findings of the current research indicates that there is a dearth of knowledge in terms of the curriculum advancement of environmental education. The findings recommends that the curriculum developers need to be informed and transformed. Having curriculum developers who are well informed of the goals and objectives of environmental education would allow curriculum developers to incorporate such skills into the curriculum and train other scholars to manage environmental education well. The findings of the current research also suggest that the management of environmental education should not only be a responsibility of the school leaders designated

to be in the school grounds but should also be the responsibility of the officials sitting under aircons and making decisions for what should and should not be included in the curriculum.

Another challenge that stemmed from the findings of the current research is the matter of the curriculum being content based rather than being practical. This seems to be a challenge for environmental education curriculum as it is more practical than theoretical. Wrenn and Wrenn (2009) emphasises the need for integrating theory with practice as such integration helps students to more closely associate the practical value of learning theoretical concepts. Furthermore, it is imperative that learners in professional programs be able to put into practice what they have learned in the classroom.

As mentioned earlier, the challenge that has stemmed from the findings is the content of environmental education being more theoretical rather than practical. Damoah and Adu (2020) noted that environmental education is doable theoretically but has failed practically to achieve the anticipated results due to challenges in its implementation. Again, in the policy document, clear guidelines are not provided.

Furthermore, it transpired from the findings of the current research that more attention is given to the FET phase in terms of matric results. This means that the quality of learning is not considered but the student's grades are more important. In corroboration, Louw (2015) argued that a focus on the matric results obscures problems lower down in the education system. The focus on matric results has the potential of posing a challenge for the management of environmental education curriculum because you cannot test the effectiveness of environmental education learning through question papers, you can only assess their willingness to act and adopt behaviour that conforms to an environmental lifestyle.

Another challenge that has been identified is the irrelevance of the content as it shows no interconnection between environmental topics and people. For example, Mrs Sydney mentioned that telling learners that it is their own behaviour that results in the death of whales will be confusing to learners, leaving them wondering how does it affect me because I do not even eat a whale? The findings of the current research pointed to the irrelevance of the content because as much as we refer to environmental topics in our teaching, the depth of such curriculum is not instilled or emphasised. Therefore, the current research recommends that

the DBE need to localise the content of environmental education and make it relevant to the daily lives of learners. Students should be able to relate to the topic taught in schools.

6.3.2 Opportunities of environmental education curriculum management

As mentioned in Chapter 5, there are opportunities of environmental education curriculum management. Literature points that as much as environmental education curriculum management may have challenges, there can be opportunities that arise from managing environmental education curriculum correctly. Currently, in literature there are opportunities that arise from environmental education curriculum management. The findings of the current research indicate that having an environmental citizenship means that we do not only have people who are aware of environmental issues, but ambassadors who are knowledgeable to prevent the occurrence of environmental issues. Mr. Mofolo mentioned that teaching learners needs to go beyond the classroom walls and should encourage problem solving. The opportunity of having an environmental citizenship might require the system of education to cater for such change. Another opportunity as suggested by the findings of the current research could be to have a healthy environment, to reach a vibrant economy and equitable society which also forms part of the sustainable development goals (UN, 2015).



Figure 6.2: Sustainability (Gibbs, 2019)

As informed by literature, the above diagram shows hands which are joined together which in the current research resembles the engagement of stakeholders to achieve common goals. Educational stakeholders are all direct and indirect participants in an educational system, including policy makers and members of the public who have a vested interest in its function and outcomes (Adebayo, 2013). It was established that educational provision is the responsibility of all stakeholders (Kufi, 2013; Takyi et al, 2013). The theoretical framework that underpins the research informs us that distributing roles amongst school leaders has a potential of contributing to the above diagram. Therefore, we cannot have a healthy environment, vibrant economy and equitable society if we do not distribute roles and have transformed mindsets if we do not have people to learn from (social constructivism). Therefore, the findings of the current research suggest that it is imperative for all respective stakeholders to join hands and manage the curriculum of environmental education correctly and effectively. In support, Ibrahim and Salleh (2017) notes that stakeholder involvement can influence implementation of policies as well as the attainment of positive educational outcomes. Therefore, the opportunities of environmental education curriculum management require effective strategies to be in place to manage the environmental education curriculum in schools and these strategies are discussed in the following section, theme 3.

6.4 THEME 3: EFFECTIVE STRATEGIES TO MANAGE SCHOOL CURRICULUM

Theme 3 focuses on the effective strategies to manage school curriculum. The theme was derived from literature review in Chapters 1 to 3 and was informed by the results and findings of the current research. The purpose of this theme is to discuss the strategies that can be adopted to manage the curriculum of environmental education in schools. Different scholars have conducted research on the management of curriculum in schools. Scholars such as Cochran (2022) states that the purpose of curriculum management is to help ensure that all students will get the most out of their education. The more global goal of curriculum management is for students to use all the knowledge and skills they have learned to contribute to society in a meaningful and beneficial way (Cochran, 2022). Cochran (2022) further mentions that all stakeholders in any given school district should contribute in ways that ensure that curriculum management is conducted as best as possible. To carry out the task of

managing curriculum, there should be strategies in place. Other scholars have discussed strategies to manage curriculum in schools. Scholars such as Glatthorn et al (2016); Glatthorn et al. (2012); Nhlanzi (2019) and Marsh (2009) have discussed the strategies to manage curriculum in schools. Glatthorn et al (2016) mentions that strategies for managing curricula in secondary schools are increasingly recognised as improving curriculum management, impacted by positive learners' performance in the 21st Century.

On the same note, Glatthorn et al. (2012) define strategies for managing curriculum as methods that the manager (principal) uses to collaborate with teachers, to supervise and coordinate decisions, to ensure that learners are taught necessary skills and standards. Strategies in managing curriculum can improve learners' performance if principals share curriculum managing and promote a shared vision of developing people through communication, support and intellectual stimulation (Nhlanzi, 2019). Amongst the strategies of curriculum management are, but not limited to a skills-management strategy, knowledge-management strategy, attitude strategy (Marsh, 2009; Bolisani et al, 2015; Chisholm & Bagele, 2012; Pas et al, 2015). Marsh (2009) states that the skills-management strategy refers to the principal's actions in persuasive communication and training workshops which influences schedule teaching, operational efficiency, performance management, induction and mentoring of staff.

According to Cheng (2012), a knowledge-management strategy refers to the overall approach an institution intends to take to align its knowledge, resources, and capacities for enhancing teachers' knowledge, which positively affects learners' performance. Attitude strategy in managing a curriculum is explained by Marsh (2009) as principals' actions which intend to motivate teachers so that they see a situation differently through persuasive communication. Marsh (2009) declares attitude strategy as a strategy by which the principal relies upon the teachers to adopt innovations in their best interests. In attitude strategy, the principal's mechanism through interacting with teachers and his or her influence affects attributes and behaviour of individuals within the school (Pas et al, 2015).

For the current research, the findings indicates that there are no strategies in place to manage environmental education curriculum. But the current research introduces strategies that can be implemented for the management of environmental education. In this section, I discussed

the strategies that can successfully contribute to distributed leadership in schools to manage environmental education curriculum. Even though the findings of the current research shows that there are no strategies in place to manage environmental education except informal assessments, the findings indicated that there are some strategies that may be adopted to manage the curriculum of environmental education better that will be further discussed in the following categories under theme 3. The discussion in this theme aimed to answer the third research question, what strategies contribute to successful distributed leadership in schools to manage environmental education curriculum?

6.4.1 Strategies to manage environmental education curriculum through distributed leadership

As mentioned in Chapter 1, it is not clear how environmental education curriculum is managed as compared to the contexts of other school subjects. It was then imperative to explore the strategies that could be adopted to manage environmental education curriculum in schools. In my view, for every curriculum to expand, different strategies have to be adopted to manage it very well in this ever-changing world. McGivney and Winthrop (2016) states that is important to build skills for a changing world that advances the quality of learning for vibrant societies. The strategies to manage environmental education curriculum through distributed leadership emerged from the results of the current research in Chapter 5 and from literature in Chapter 2 and 3. Therefore, in order to understand the strategies to manage environmental education curriculum, it was then important to access the perceptions of environmental education concept by the schools' leaders as a subcategory.

6.4.1.1 Perception of environmental education concept

UNESCO (1985) describes environmental education as organized efforts to teach how natural environmental functions, and particularly how human beings can manage behaviour and ecosystems to live sustainably. It is a multi-disciplinary field integrating disciplines such as biology, chemistry, physics, ecology, earth science, atmospheric science, mathematics, and geography (UNESCO, 1985). For the interest of the current research, the concept of environmental education is a multi-disciplinary study that attracts efforts of all stakeholders to learn sustainable ways to mitigate environmental issues and live an environmental lifestyle. The findings of the current research in Chapter 5 indicated that there is a paucity of knowledge

from the school leaders when it comes to the knowledge of environmental education as the responses of participants could only go as far as making people aware of the environmental crises and making them aware of their impact.

The findings of the current research indicated that the concept of environmental education seems to be confusing to the stakeholders as Ms Nkosi, Mr Mofolo and Mr Kim mentioned that they are not sure to what extent they understand environmental education and also Mr Kubheka mentioned that she does not know what environmental education is. It is important to note that school stakeholders do not understand the concept of environmental education. On the same note, Gough, and Gough (2016) argued that a complicating factor for environmental education as both a product and a process has been that it does not neatly fit into any traditional subject areas of the curriculum, and its interdisciplinary or multidisciplinary nature has meant that it has often been marginalized in traditional schooling. Therefore, the argument of Gough and Gough (2016) and the findings of the current research indicates that context of environmental education is confusing not just as a concept, but it does not fit within the traditional subject areas of theory. The implication of such lack of knowledge may result to school stakeholders to withhold their participation because they do not understand what it is that they are doing, and they are not familiar with the scope of environmental education. Therefore, I suggest that stakeholders need some intervention programmes to offer them support with the understanding of the scope of environmental education before being expected to implement environmental education in schools. Departmental seminars may also assist to raise awareness on environmental education.

6.4.1.2 Stakeholder role in the implementation of environmental education

To explore the strategies to manage environmental education curriculum, it is imperative to explore the understanding of school leaders when it comes to their roles in the implementation for environmental education. In literature, the roles of school leaders when it comes to the implementation of the curriculum has been discussed by different authors. Filho and Brandil (2016) stated that the engagement of various stakeholders is essential in order to cater for the implementation of sustainable development. Furthermore, Beierle (2002) mentioned that stakeholder involvement in environmental decision-making improves the quality of

decisions. Therefore, both universities and companies see it as necessary to engage their respective stakeholders in their activities (Filho & Brandil, 2016).

However, there is dearth of knowledge regarding stakeholder role in the implementation of environmental education. The findings of the current research indicated that participant understanding of their roles in environmental education is only limited to making people aware of the environmental issues and their impact on the environment. In my view, understanding the concept of environmental education could help participants locate their roles and importance of being curriculum agents. However, participants seemed confused of what exactly is environmental education as mentioned in the preceding category.

There is also a confusion when it comes to stakeholder roles in implementing environmental education. Such confusion was evident to the response of Ms Nkosi when she mentioned that her role is to call teachers to ask them about suggestions to manage environmental education. Her response indicated that teachers are only involved or called to make decisions on the curriculum whenever the subject advisors and principal are clueless about the content, in particular, environmental education content. The findings from the current research revealed that school leaders have no interest on the content of environmental education. I argue that when subject advisors are not keen about environmental education curriculum affairs, then who will instil the implementation of environmental education?

On the same note, Mr Kim referred to himself as an overseer through the monitoring of teacher's books. The responses of Ms Nkosi and Mr Kim indicated that other school leaders view themselves as superior to other school leaders and environmental education is a responsibility of a teacher. This indicates that they do not understand their roles regarding the management of environmental education. The findings of the current research revealed that the SMTs is not managing the curriculum of environmental education just as the subject advisors. Therefore, in my view subject advisors, principals, and HODs seem to be lost and exclude themselves when it comes to environmental education curriculum management. They do not consider themselves as people who have roles to play. However, I do not blame the school leaders for not understanding their roles because no one has outlined the school leader's roles in the implementation of environmental education.

Ms Khumalo touched on social constructivism theory as she mentioned the importance of demonstrating behaviour that learners should learn from. Her response suggested that a role of a teacher in relation to environmental education implementation is that of demonstrating good environmental behaviour to the learners. This tells us that other school stakeholders are excluded from the implementation of environmental education. It is only a teacher who is considered to have a role to play in the implementation of environmental education. Calixto (2012); Diaz et al (2019) stress that a teacher's role is to promote school activities so that it can have an impact on the personal responsibility of students in environmental actions and their social commitment to act against pollution. In addition, a teacher's role is to encourage their students critical thinking and development of skills, analysis and logical reasoning to solve problems. However, I do not agree with this notion of placing the burden of environmental education on the shoulders of teachers alone.

The findings of the current research also indicate that some school leaders perceive environmental education as a joke. As stated in Chapter 5, Mrs Sydney mentioned that learners laughed at them when they tried to raise awareness about environmental issues. In my view this is happening because even school leaders or managers do not see any value in teaching learners about the environment. If environmental education was considered as an important aspect of the curriculum, learners would see a need to take it seriously. This makes it difficult to manage something that you see as a joke and which really convinces me that we live in hard times where the state of the environment is devastating, but we find humour in that. However, the findings of the current research suggests that school leaders should view this as another way of teaching learners about the environment through humour. Which means that such humour should not be a discouragement for school staff to teach environmental education, but it should be used as a strategy to get learners involved through introducing exciting activities and the introduction of exciting activities requires an innovative mind. Bengtsson and Lysgaard (2022) also support an approach of humour as the authors mentioned that irony can be both necessary and constructive in environmental education and sustainability education. Irony is used to tease out certain ontology and epistemological conditions of environmental education (Bengtsson & Lysgaard, 2022). Therefore, the findings of the current research suggest that the school stakeholders should be open to all forms of teaching.

Literature points that there is dearth of knowledge in terms of environmental education curriculum management. I suggest that the DBE should have a clear structure of how environmental education can be managed. The implications of not having a clear structure of such management may even lead to environmental education being disregarded as it will be seen as being irrelevant.

6.4.1.3 Stakeholder empowerment to freely participate in decision-making on curriculum issues

To explore the strategies to manage environmental education curriculum, it is imperative to understand how stakeholders are empowered to freely participate in decision-making on curriculum issues. The purpose of this subcategory is to discuss the extent to which distributed leadership is adopted by school leaders to empower school staff in terms of curriculum management and decision making. Literature points that school leaders/stakeholders can be empowered in various ways. Cheng et al (2016) state that school leaders can be empowered through school autonomy. School autonomy has been identified as a strong lever for the empowerment of school leaders and teachers (Cheng et al, 2016). School autonomy often involves a multiplicity of authorities and stakeholders that participate in the decision-making processes (Cheng et al, 2016).

From the findings of the current research, it transpired that even though stakeholders may be given a chance to share their views, the decision-making powers are not distributed. This means that there is a certain extent to which school leaders can go with airing their views, but they cannot participate when it comes to making decisions as only those on top of the hierarchy can make decisions. In Chapter 5, Ms Khumalo mentioned that even though her principal may ask for suggestions, the SMTs do what they deem right and do not consider what the other staff has said. She further mentioned that sometimes she keeps quite because she has been told by the other older colleagues that even if you share your view they will not take your suggestions.

Also, the findings indicated that even those of top of the hierarchy do not have as much power in the fullness of curriculum management as we know that the components of curriculum management are not only curriculum monitoring but also development and evaluation as well. Therefore, even those in high positions have no say when it comes to curriculum development

which makes it even more difficult to manage something when you are not part of its development. In Chapter 5, Mr Mofolo mentioned that the national team may request for suggestions in terms of curriculum development or reform but they never consider the suggestions made by subject advisors. It is even worse for teachers because they are viewed as curriculum implementers but have no contribution on the development of the curriculum. In this regard, other scholars have mentioned that teacher expertise are an essential part of the curriculum development. Scholars such as Alsubaie (2016) state that with teacher expertise which includes knowledge, experiences and competencies, teachers are central to any curriculum development effort. Alsubaie (2016) further mentioned that better teachers support better learning because they are most knowledgeable about the practice of teaching and are responsible for introducing the curriculum in the classroom.

Underwood (2019) also state that the district should have authority to determine curriculum and not individual teachers. Teachers as employees must implement the curriculum and abide by any restrictions and they do not have a right to use whatever teaching material and methodologies they choose that is contrary to school policy (Underwood, 2019). The argument of Underwood (2019) is deemed to be true because the findings of the current research indicated that school stakeholders follow an Annual Teaching Plan (ATP) that is designed and given by the district to implement. This means that the power of managing the curriculum really rests with the national departments. Mr Mkhungo and Mr Kim mentioned that they receive ATPs from the Department of Basic Education and monitor whether teachers are following the ATP. The findings of the current research indicates that teachers are only empowered to implement curriculum and manage the classroom. However, Mr Mthunzi had a different strategy in which he empowers his staff through developing micro-political committees. The findings of the current research still indicate that school staff seem to be empowered in terms of dealing with learners and content in the classroom, they are not expected to manage the curriculum. Teachers do not feel empowered to take decisions. When they come up with ideas, the SMT of the school will stick to what was agreed on and turn a blind eye. The SMTs feel like they are empowered at a district level rather than at a school level as they attend workshops which are based on subject curriculum implementation. Mr Mkhungo mentioned that the only empowerment they receive is through the subject-based workshop hosted by the DBE.

Alsubaie (2016) states that teachers need training and workshops which are geared towards professional development to be able to contribute to curriculum development. I argue that teachers should not be empowered to implement but they should be trained in a workshop for all stages of curriculum management as outline in Chapter 3. I recommend that such workshops and training should also be implemented for the environmental education curriculum management even at a national level. It is clear that we do not have environmental specialists who are more knowledgeable to integrate environmental education content in the school curriculum.

6.4.1.4 Working towards the same organisational goals

To understand theme 3 which are strategies to manage environmental education curriculum, it is also necessary to understand that besides the empowerment of stakeholders how do they work towards the same organisational goals. The purpose of this subcategory is to discuss the relevance of organisational goals to environmental education. Literature suggests that the primary school goals are attainment and results, reducing the attainment gap, improving attendance and new pedagogical techniques/learning strategies (Promethean, 2015). The findings of the current research indicate that the goals mentioned by the school leaders are in line with the school goals suggested by literature. In this regard, Mrs Sydney, Mrs Mkhize, Mr Kim and Mr Knowles mentioned that their school goal is to ensure that their students receive exceptional matric results. It is important to note that the goals mentioned in literature and by the participants, whether short term or long term had nothing to do with environmental education. A goal of environmental education stated by the UNESCO (1976) on the Belgrade Charter is to develop a world population that is aware of and who is concerned about the environment and its associated problems. To ensure the population has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively towards solutions of current problems and the prevention of new ones.

It is my view that schools should be goal driven to ensure that the whole staff work collectively and individually sharing the same vision. Praveena and Geetha (2022) opines that organisational goals guide employee efforts, justify a company's activities and existence, define performance standards, provide constraints for pursuing unnecessary goals and function as behavioural incentives. The findings of the current research indicated that the

environmental aspect in the curriculum is not within the school goals. Therefore, this raised a concern to me as an environmental specialist that school stakeholders are not motivated to even consider environmental education as important, let alone managing its curriculum. It seems as if everyone is doing what they feel like at school. There are no goals in place at schools. I argue that what then are school leaders working towards in respect of environmental education management? This is evident from the response of one of the subject advisors Ms Nkosi. She mentioned that she does not believe they are all working towards the same organisational goal because their goal is ensuring the teaching and learning take place and there must be evidence which they cannot find.

I believe that it is important to get people to work together and align themselves with the goals of the organisation. On the same note, Ryba (2021) came up with strategies of how to align individuals, teams and organisational goals for success. She stated that when aligning the organisational goal, clear goals must be set (Ryba, 2021). From the findings of the current research, it transpired that the goals are not outlined as some teachers do not even know the goals of the organizations that they work for. Ms Khumalo stated that she believes there are some goals somewhere or maybe in her teacher file, but she is not aware of them as they are not communicated.

Ryba (2021) further mentions that you need to get buy-in from leadership. This strategy was earlier mentioned by Mr Mofolo. Ryba (2021) found this strategy equally effective to align organisational goals with individual or collective employees. Another aspect that Ryba (2021) mentioned is the communication of goals. The findings of the current research indicated that in schools, goals are not communicated with the rest of the staff. Some goals are only shared in written format. In support, Mr Mkhungo mentioned that in their school the goals are not shared with them, but if you look for it you might find them stored away in some location. This means that the goals are communicated with some staff and not all staff. It transpired from the findings of the current research that most communication in other schools is conducted through issuing documentations. In my view, this is not just in schools but applies to the DBE. Hence, this makes me wonder why environmental education programmes is not even documented like other important school aspects. However, in the specification of goals, Mr Mthunzi mentioned the goal of transforming their school into a smart school, which is a great idea if the environmental aspect will be incorporated.

From the findings of the current research, I recommend that the integration of environmental, science and technology movement might be beneficial for DBE system and for the management of environmental education curriculum in schools. This is important as we know that there are some environmental problems that may be sorted by adopting the use of science and technology. In corroboration, the NAAEE (2015) favours the integration of technology and environmental education to help bridge the gap. Teachers can integrate technology and media with environmental education through activities that encourage children to explore, create, solve problems, communicate, collaborate, document, investigate, and demonstrate their learning about the world outside their classroom (NAAEE, 2015). In agreement, Lay (2019) opines that as demands on the environment continue to intensify, it becomes increasingly urgent to act sustainably, responsibly and respectfully to protect and restore environments. Therefore, the integration of environmental, science and technological content may be of great value to implement an environmental education curriculum that will promote practicality over theory.

In summary, it is recommended that the goals of schools should include but are not limited to integration of environmental education and transparency in terms of communication with all stakeholders and not just a chosen group.

6.4.1.5 Devices to incorporate environmental education in the classroom

As mentioned in Chapter 1 and in theme 2, apart from the challenges of environmental education, there are opportunities for implementing environmental education. It was imperative to observe the devices that are used by teachers to incorporate environmental education in the classroom. Literature suggests that teaching aids are an integral component in any classroom (Sudhakar, 2017). Sudhakar (2017) further asserts that many benefits of teaching aids include helping learners improve their reading comprehension, illustrate or reinforcing a skill or concept, differentiate instruction and relieve anxiety or boredom by presenting information in a new and exciting way. Teaching aids also engage students since there are no limits in what aids can be utilized when supplementing a lesson (Sudhakar, 2017). In my view, teaching and learning devices can be any collection of materials including animate and inanimate objects and human and nonhuman resources that a teacher may use in teaching and learning situations to help achieve desired learning objectives.

However, literature further suggests that such devices can also be technological (Fu, 2013). Technology devices have been described as devices that have the potential to bring enthusiasm and improve the interest of learners in the classroom (Fu, 2013). My view is that these devices also stimulate participation and productivity as they capture student's attention in the topic being learnt. However, the findings of the current research indicate that there is a scarcity of teaching aids in schools. During my observations in schools, I did not see teachers use any technological devices to incorporate environmental education lessons. The only learning tools that were used as mentioned in Chapter 5 were chalkboards, chalk, worksheet and one textbook used by a teacher. It seemed as if these schools do not even have enough textbooks to be given to learners to refer too while the teacher is explaining. Therefore, the findings of the current research recommend that to address the shortfall of teaching and learning materials, the DBE should consider embracing the benefits that comes with the new era of the fourth industrial revolution which is digitising education. I found it disturbing that researchers still report on a lack of teaching resources. Schools could take advantage of the technological means while preserving the environment. The use of technology as mentioned in the preceding sections have various advantages for learners as learners will not be required to carry books anymore. This will ease the pressure on the production of paper which causes a major environmental problem such as desertification.

In support, the NAAEE (2015) emphasises the need for teachers to honour their jobs to help level the playing field and provide all students an equal chance to succeed. By integrating the nature and technology we can create an opportunity for young children to become both environmentally and technologically literate. Environmental education is more than just learning about plants and animals and the environment (NAAEE, 2015). It is an invaluable tool for teaching critical thinking skills and applying these skills to a students' everyday world (NAAEE, 2015). As further argued by NAAEE (2015), teachers can integrate technology and media with environmental education through activities that encourage children to explore, create, problem solve, communicate, collaborate, document, investigate, and demonstrate their learning about the world outside of their classroom. My view is that environmental education teaching besides teaching about plants and animals and environmental issues, offers opportunities to learners and communities by integrating environmental knowledge with innovation. For example, environmental threats can be transformed into environmentally

based business opportunities for youth. Learners may be exposed to entrepreneurship at an early age which makes the environmental education curriculum significant and help attract government entities to be involved as stakeholders.

The recommendation from the findings of the current research is that the DBE needs to have a clear plan of how environmental education could be integrated and implemented in schools. They should consider looking at the context of the curriculum of environmental education to ensure that environmental education presents opportunities for communities to grow and encourages individual development. The next section focuses on the strategies that can contribute to the success of environmental education.

6.4.2 Strategies to be adopted to manage environmental education curriculum

To understand the strategies to be adopted when managing environmental education curriculum, it was imperative to rely on the literature in Chapters 1, 2, 3 and 5 of the current research. In this section, I saw it imperative to highlight the strategies that I believe can contribute to the management of environmental education while guided by the literature and the findings of the current research. In Chapter 1, environmental education is not confined to the classroom and not only aimed at children. Environmental education can take place as formal, informal and non-formal environmental education contexts (Paraskeva-Hadjichambi et al, 2020). Paraskeva-Hadjichambi et al (2020) further states that environmental education has lifelong relevance to all people from different walks of life. Therefore, the strategies to manage environmental education should not be constrained to the classroom setting but should be extended out of the classroom. In Chapter 3, environmental education is described as being integral to the socio-economic development processes required to ensure equality and a better quality of life for all (UNESCO, 2020). Environmental education processes can differ in different contexts and a range of different methods will be needed (Paraskeva-Hadjichambi et al, 2020).

In Chapter 5, the findings of the current research indicated that there are various strategies that can be adopted to manage environmental education curriculum. These strategies stemmed from the literature, theoretical framework, and the findings of the current research. Firstly, amongst the strategies that have been mentioned in Chapter 5, skills development might be one of the strategies to manage the curriculum of environmental education. This can

only be attainable with environmentally skilled stakeholders. Skill development is one of the components of environmental education. According to Athman and Monroe (2001), the components of environmental education are as depicted in Figure 6.3.

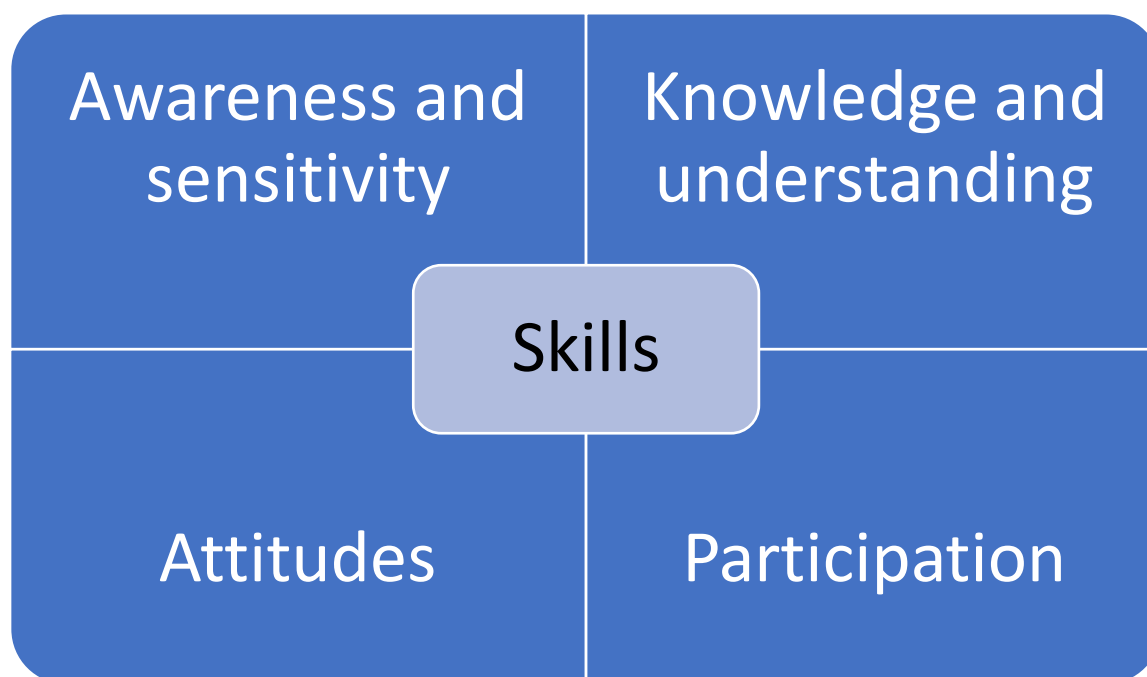


Figure 6.3 The components of environmental education (Athman & Monroe, 2001)

As mentioned in Chapter 5, the findings of the current research indicate that the component of awareness, sensitivity, knowledge and understanding of the environmental issues are found in schools. Nothing more is done after raising awareness and knowledge. In support, Mr. Knowles mentioned that in their school they once had an environmental committee but not anymore, while Mrs Sydney mentioned that they do not have one. After learners are taught about the environment, there must be initiatives that motivate behavioural change. It is important for initiatives to take place after awareness has been raised. The other components are not being fully explored. Therefore, it is imperative for environmental education components to be explored in full to allow productivity. Kinnear (2021) mentions that environmental education promotes critical and creative thinking skills and inspires children to become more engaged with their communities. However, the findings of the current research revealed that a lack of skills are acquired. The CAPS document failed to demonstrate the acquisition of environmental skills by learners after lessons. Therefore, I argue that environmental skills development should be thoroughly enforced. Since environmental

education encourages learners to research and investigate how and why things happen, it is fundamental that learners get the necessary skills to make decisions in terms of the actions they need to take to contribute to sustainable environment. I recommend that curriculum restructuring is important by the DBE to ensure that the content provided to learners enforces and encourages skills development. Therefore, by developing and enhancing critical and creative skills (not just teaching learners about environmental issues as a concept), environmental education will foster a new generation of informed consumers, workers, as well as policy or decision markers.

Secondly, it is important to bear in mind that the content of environmental education is integrated into the curriculum of other subjects, therefore it is important for a curriculum to adopt at least one ideology in its development. Fiala (2007) describes an ideology of education as the beliefs, customs, culture, and values that give direction to education in areas of the curriculum such as economics, politics, moral and religious, knowledge and truth, the aesthetic and artistic. However, the curriculum of environmental education does not seem to be guided by any ideology. In my view, the second strategy that can be adopted when managing the environmental education curriculum is the environmentalism ideology. Environmentalism or environmental rights is a broad ideology and social movement regarding concerns for environmental protection and improvement of the health of the environment, particularly, as the measure for this health seeks to incorporate the impact of changes to the environment on humans, animals, plants and non-living matter (Davies, 2020).

Environmentalism focuses more on the environmental and nature-related aspects of green ideology and politics, ecologism, and environmentalism. This should be done in a fairness of an allocation or more broadly to how people judge what they receive. Therefore, another strategy could be an ideology of distributive justice alongside the environmentalism ideology. Distributive justice ensures that the distribution of roles amongst all stakeholders who manage environmental education curriculum is fair and not one-sided (d'Anjou et.al, 1995; Herzog, 2015). This ideology might help in addressing the issue of other school stakeholders being excluded in the leadership and management of curriculum, and for the interest of this research, the curriculum of environmental education. In my view, after environmentalism and distributive ideology there should be transformation. Therefore, another ideology that should be adopted by the environmental education is transformative ideology. Transformative

ideology should transform societies and humanity (Day, 1998). In my view, it should liberate human potential and resolve social/environmental problems. The combination of these ideologies may bring a sense of purpose in the lives of the citizens.

Thirdly, another strategy that was mentioned by Mr. Mofolo in Chapter 5 is the buy in strategy. The strategy of buy in has been adopted in education and is believed to promote a commitment to excellence as well as a motivation to learn and grow on the part of both students and teacher. Buy in is a strategy to get leaders, managers, supervisors, peers, colleagues, lobbyists, politicians, and everywhere to get people to agree to do what they want them to do (Willumse et al, 2018). Buy in is also a strategy to get people to take part and be engaged (Willumse et al, 2018). A buy in strategy seems to have so much significance in the current research, as the adoption of this strategy might help get different stakeholders on board for the management of environmental education curriculum. Firstly, the implementation of this strategy should start from the national level as they seem to hold more powers when it comes to curriculum decisions and its development.

For the interest of the current research, a buy in strategy could be used as a strategy to manage environmental education curriculum by all stakeholders. Felder and Brent (1996) mention that when students are committed, they begin to willingly ask probing questions, take risks, work with others, participate fully in class, accept increasing challenges, welcome new situations, and assess performance. In my view, a buy in strategy needs to be implemented from a national level down to the local level, as this strategy might be effective to promote participation and practicality. Burke (2021) states that in a buy in strategy, it is difficult for students to be engaged and excited about the material if the teacher shows no enthusiasm. It is therefore imperative for stakeholders to show enthusiasm even before trying to implement environmental education in the classroom because it can be confusing to implement something that you have no interest in, which is one of the challenges that have transpired from the findings of the current research. There seems to be no interest in environmental education. Participants also mentioned monitoring of teachers and learner's books as means of managing curriculum. However, in my view leaders monitoring of books should not be considered as a strategy for managing environmental education, because environmental education is not theoretical but rather practical. Actions, behaviour change, development of programs could be some of the attributes to manage environmental education, rather than

monitoring that an environmental topic has been covered. The depth and extent of the impact of teaching and learning is evident through action and participative application. This is another reason why I still argue that the findings of the current research call for the restructuring of environmental education curriculum to be descriptive and analytical as informed by the findings of the current research.

Lastly, another strategy could be to empower all stakeholders to improve and restructure curriculum. This strategy is supported by the social constructivism theory which is empowering those who seem to be more knowledgeable. I believe that this applies to those who are in higher positions who can learn from each other (Vygotsky, 1978). From the analysis of data, it transpired that there is no form of motivation in schools from the management of curriculum. This lack of motivation is worse when applied to the environmental education curriculum as an infused content. The findings of the current research indicated that more support is needed to deal with and handle the environmental education curriculum. Therefore, the empowerment strategy seems imperative in managing environmental education, as there seems to be no empowerment majors in place. However, it is my view that most strategies can be attainable when we have crossed the bridge of having sufficient and relevant teaching and learning materials and with access to a learning space and freedom which is still a political shortfall. Many researchers found that the provision of teaching and learning are a challenge to effectively manage environmental education (Hudson, 2001; Rahman, 2016; Mupa and Chinooneka, 2015; Shah & Jehangir, 2006) which was discussed in the above research section. However, the national team has not attended to these challenges as mentioned by the above-mentioned researchers in their studies. I recommend that the ministry of education investigate these strategies and employ them to improve the teaching and learning process of environmental education in schools. It is important to note that environmental education is relevant to all citizens, therefore, it is important that environmental education becomes a focal point as the issues of the environment affect the whole globe.

The reason to call upon all stakeholders to effect strategies to manage environmental education curriculum stems from the United Nations environment strategy (2022) which considers environmental education as continuous lifelong learning that emphasizes the complexity of environmental issues and calls for the use of different and innovative

educational approaches to teaching and learning. The UN environment strategy (2022) is also consistent with the environmental education principles which recognize environmental education as a continuous and lifelong process which is based on interdisciplinary approaches, active participation, and individual and group responsibility for the environment. Therefore, working towards sustainable development is the responsibility of every citizen. This makes environmental education important for everyone and environmental management a responsibility for all citizens. A recommendation for South African curriculum is to be Africanized. Africanizing the curriculum of environmental education can be another strategy to manage environmental education curriculum to allow learners to relate to the content of environmental education. In that way, this can improve learners and teachers' engagement with something they know, or the curriculum is foreign to them.

6.5 NEW INSIGHT

The new insights have emanated from the findings of the current research presented in Chapter 5 and the literature in Chapter 2 and 3. From the strategies that have been presented and discussed in the above section, an environmental education curriculum management model is proposed. This might help bring balance into the curriculum management of environmental education which does not seem to be happening. The below model is made up of an environmental ideology, distributed leadership, transformational leadership, skills building and a buy in strategy as depicted below.

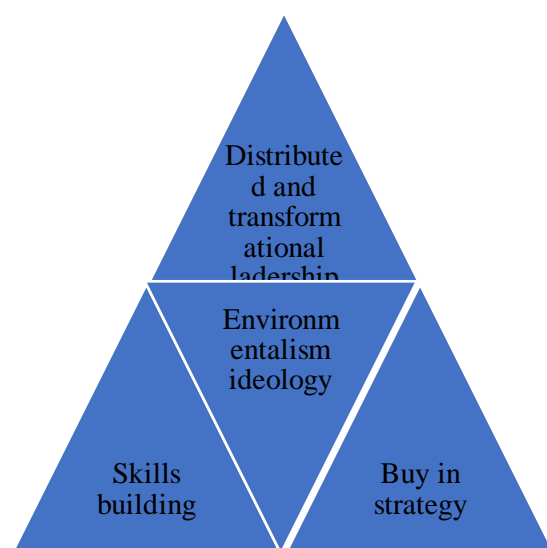


Figure 6.4: Environmental Education Curriculum Management Model.

However, this model has not been tested. The findings of the current research recommend further research to test the proposed model and its relevance for its adoption when managing environmental education curriculum through distributed leadership in schools.

6.6 SUMMARY OF THE CHAPTER

Based on the findings of the current research there is no indication, whatsoever, that environmental education is being managed in schools except reflecting on environmental topics by making examples when teaching. The environmental topics that appear on the CAPS document only relate to the scientific problem and slightly on environmental education. The findings also revealed that the curriculum is more theoretical and does not promote practicality. Therefore, it is imperative for the curriculum to be restructured. The findings also indicated that stakeholder engagements would be beneficial if adopting the distributive and transformational leadership approaches rather than having leaders who do not include teachers in the curriculum management process. Again, the findings the current research also indicate that the respected stakeholders do not understand their roles with managing environmental education as some excludes themselves and place this as a sole responsibility of a teacher. The CAPS document of NS does not have sufficient material to back up the management of environmental education as the topic is explored more scientifically.

7. THE SYNOPSIS OF FINDINGS, CONNECTION AND DEDUCTION OF THIS RESEARCH

Education is the best weapon through which we can fight poverty, ignorance and terrorism

“Malala Yousafzai”

7.1 INTRODUCTION

The relevance of Malala’s quotation in this research emphasises the need to use education as a weapon to fight poverty and ignorance of citizens to environmental impediments and the fear of taking action in a just society. This chapter presents the summary of findings, implication, recommendations, and conclusion that resulted from findings of this research on the strategies to manage environmental education curriculum through distributed leadership. The conclusion is based on the rationale, purpose, research questions, aim and findings of this research. The conclusion will also be discussed based on the recommendations of this research.

7.2 RESEARCH OVERVIEW

This research consists of six interrelated chapters which will be briefly discussed in this section.

Chapter One

This chapter gave an introduction and background of the research and discussed the rationale of the research. Furthermore, this chapter also presented a statement of problem, outlined the research questions, purpose, objectives and an aim of the research. This chapter also discussed the context, limitation, delimitations, ethical considerations, and concepts of this research.

Chapter Two

In this chapter the literature that was consulted and reviewed discussed the three theories that I adopted. This made up the theoretical framework of this research namely, distributed leadership theory, transformational leadership theory and social constructivism theory.

Chapter Three

This chapter discussed the literature review of this research and the models of environmental education in place which can assist in drawing up a model of environmental education curriculum management model. In this chapter, the research gaps found from other studies have been discussed that this research might bridge these gaps.

Chapter Four

This chapter discussed the research methodology which comprises a research paradigm which is a constructivism research paradigm which is epistemological in nature, a qualitative research approach, a case study research design, individual interviews, observations, and document analysis as data collection tools with 16 participants who were purposively sampled in three secondary/high schools. The maintenance of quality assurance data was also discussed.

Chapter Five

In this chapter the findings were discussed. The data collected was organized in terms of each data collection tools and under each research questions and interview, observation guides and document analysis questions guide in terms of presenting, analysing, and discussion of findings.

Chapter Six

This chapter discusses the overview of the chapter, summary of the findings, Implications of the research, contribution of this research, recommendations that introduces a new proposed environmental education curriculum management model, and limitations of the research and draws a conclusion of this research.

7.3 SUMMARY OF THE FINDINGS

As mentioned earlier, the findings of this research were discussed according to the research questions. The main question to be answered by this study was what strategies are available to advocate for distributed leadership and to what extent are they harnessed to enable environmental education curriculum management in secondary schools?

7.3.1 What is the role of school principals, school management teams (SMTs), teachers and departmental officials in managing environmental education curriculum?

The current research revealed that the stakeholders are confused about their roles in managing environmental education curriculum. This makes the management of environmental education a challenge because if stakeholders do not understand their roles, then they will not be able to practice their responsibilities. Distributed leadership must be adopted when roles are distributed and communicated to stakeholders so that there may be a fair share of such roles. Triegaardt (2016) states that principals are expected to be experts of curriculum management, in my view, this also includes subject advisors. Therefore, distributed leadership helps to balance leadership and management roles amongst all stakeholders to implement better strategies of curriculum management. In schools where distributed leadership is ineffective, it becomes difficult for stakeholders to carry their roles as they may not know which roles that may perform. As mentioned in Chapter 5 and 6, it is important for stakeholders to know their roles and not just to know them, but to have full understanding and to carry them. The current research also found is that the reason why stakeholders do not understand their roles is the fact that there are no clear guidelines and they do not have a say to how curriculum is developed.

7.3.2 What are the challenges and opportunities of school principals, department officials, teachers, and School Management Teams (SMT) in achieving distributed leadership in the environmental education curriculum?

In my view, challenges seem to be common in terms of managing curriculum, especially with the curriculum of environmental education development, integration, and implementation. The current research found that there are many challenges in schools not only with regards to curriculum management, but in the way the schools are lead and managed which affects

curriculum management. Curriculum management can be affected by many things such as the school environment, working relationships, decision making and so on because participants focus more on the application of distributed leadership. So since they are experiencing challenges with distributed leadership and transformative leadership which I view as a necessity to manage environmental education, the management of environmental education stands a less chance to be managed successfully. In this way, environmental education is not given the necessary attention that it deserves because many other challenges at schools are left unaddressed.

Apart from the challenges that are faced, this study also found opportunities for environmental education management in distributed, transformational and social constructivism leadership. The current research also found that environmental education management could lead to environmental citizenship. Another opportunity is to finally live in a healthy environment which is not harmful to our health, have a vibrant economy and equitable society through distributed leadership whereby sharing of environmental preservation responsibilities are promoted.

7.3.3 What strategies, contribute to successful distributed leadership in schools to manage environmental education curriculum?

The current research found that there are no strategies to manage environmental education but the data of this research introduced some strategies. This study found that skill building may be one of the strategies to manage the environmental education curriculum. As asserted by McGivney and Winthrop (2016) skills building is essential to ensure quality of learning for vibrant societies. Skills building is imperative as it results in environmentally inclined stakeholders. Another strategy to be adopted is environmentalism, distributive and transformative ideologies, the buy in strategy that was introduced by one participant and empowerment of stakeholders. All these strategies helped in the development of an environmental education curriculum management model in Chapter 6.

7.4 IMPLICATIONS OF THIS RESEARCH

The current research implied that environmental education has no strategies in place for its management. Another implication was the development of an environmental education

curriculum management model which seems imperative. Also, the promotion of all stakeholder engagement is essential because this might allow for sharing of roles/responsibilities. Adoption of distributed and transformative leadership, buy in strategy, environmentalism ideology and skills building might contribute to the success of the environmental education curriculum management.

7.5 CONTRIBUTION OF THIS RESEARCH

The contribution made by the current research would be to propose a NEW environmental education curriculum model as presented in the Chapter 6 and in recommendations which might assist the Department of Basic and Higher Education to restructure the curriculum to promote practicality rather than being theoretical based currently. The model is developed from the strategies which are/might be useful in managing the environmental education curriculum which does not seem to take place right now. The current research also contributes to the environmental education curriculum management as it has not been explored before. Therefore, since many scholars have found that teachers do not have necessary knowledge to implement environmental education, then the current research proposes certain strategies in a form of a model of how environmental education curriculum can be managed in its complexity.

7.6 RECOMMENDATIONS

The recommendations from this research are:

- The introduction of a new developed environmental education curriculum management model which might assist in adopting effective strategies which is made up of distributive and transformative leadership, environmentalism ideology, skills building and buy in strategy.
- Restructuring the curriculum to be practically based rather than being theoretical.
- Promote communication and transparency.

- Empowerment of all stakeholders through decision making powers being distributed.
- Introduction and implementation of environmental programs that could promote behaviour change and taking action.

7.7 CHALLENGES

A challenge was encountered during the selection of participants for this research.

7.7.1 Selection of participants

Usually, participants get uncomfortable with sharing the affairs and concerns of their schools with a stranger. Therefore, the participants seemed to be holding back some information. I had to win their trust first so that they could have confidence in me. I still feel like it was necessary for me to also have interviews with the curriculum developers from the national level to get more information on the strategies they have to adopt in managing the environmental education curriculum. From the beginning of this research, it has been aimed at including the school governing body which became impossible as they did not seem to be part of the curriculum management team. This was discovered during the interactions with the school management team.

7.8 CONCLUSION

The current research has concluded that there are no strategies in place to manage the environmental education curriculum. The curriculum is theoretical-based and not practical. Stakeholders do not understand their roles in terms of environmental education curriculum management, and they do not adopt distributed leadership in management of environmental education. The stakeholders do not seem to understand their roles because there are no clear guidelines and do not have a say in the development of the curriculum which is a form of curriculum management. The current research also concluded the challenges which are experienced in schools are a result of being led by stakeholders who do not maintain transparency in terms of communication the goals of the institutions with the rest of the staff while also giving necessary attention to environmental education. Apart from such challenges, this research concludes that there are also opportunities of environmental education curriculum if some strategies can be followed. Moreover, this research came up

with strategies that can facilitate environmental education curriculum management effectively in a form of an environmental education curriculum management model. The current research recommends the restructuring of the curriculum to promote practicality and stakeholder engagement through equal power by roles being distributed amongst all stakeholders to effect transformation.

REFERENCES

- Fensham, P. J. (1976). *A Report on the Belgrade Workshop on Environmental Education, UNESCO-UNEP Environmental Education Program, Belgrade, 13-22 October, 1975*. Curriculum Development Centre.
- Aarnio-Linnanvuori, E. (2019). How do teachers perceive environmental responsibility? *Environmental Education Research*, 25(1), 46-61.
- Abboud, N. A. (2021). The Concept of Environmental Education. In *EcoIslam, Education, Environment, Youth*. <https://www.econema.org/environmental-education/>
- Abdullah, A. G. (2005). Kepimpinan transformasi pengetua dan penggantian kepimpinan sebagai penentu komitmen terhadap organisasi dan perlakuan warga organisasi pendidikan. *Malaysian Journal of Educators and Education*, 20, 53-68.
- Abend, G. (2008). The meaning of 'theory'. *Sociological theory*, 26(2), 173-199.
- Achimugu, L., & Obaka, H. P. (2019). Influence of principals' leadership styles on senior secondary school students' achievement in chemistry. *Science Education International*, 30(2), 92-96.
- Adams, C. A. (2017). Conceptualising the contemporary corporate value creation process. *Accounting, Auditing & Accountability Journal*, 30(4), 906-931.
- Adebayo, O. A. (2014). *Exploring the views of pre-service science teachers about how they learn to teach environmental education* (Doctoral dissertation). University of KwaZulu Natal, South Africa.
- Adom, D., Hussein, E. K., & Agyem, J. A. (2018). Theoretical and conceptual framework: Mandatory ingredients of a quality research. *International journal of scientific research*, 7(1), 438-441.
- Adu, E. O., & Ngibe, N. C. (2014). Continuous Change in Curriculum: South African teachers' Perceptions. *Mediterranean Journal of Social Sciences*, 5(23), 983-989.

Agrawal, S. (2020). Education is the Most Powerful Weapon You can Use to Change the World. In *Thrive Global*. <http://www.google.com/amp/s/thriveglobal.com/stories/education-is-the-most-powerful-weapon-you-can-use-to-chang-the-worl/amp/>

Ahmed, A. (2008). Ontological, Epistemological and Methodological Assumptions: Qualitative versus Quantitative. *Online Submission*. University of Exeter, UK.

Ajayi, O. V. (2017). *Distinguish between Primary Sources of Data and Secondary Sources of Data* (Doctoral dissertation). Benue State University, Makurdi.

Akdemir, Ö. A., & Ayik, A. (2017). The impact of distributed leadership behaviors of school principals on the organizational commitment of teachers. *Universal Journal of Educational Research*, 5(n12B), 18-26.

Akhtar, D. (2016). Research design, Research in social science: Interdisciplinary perspective. *Social research foundation, Kanpur, India*, 73.

Aldawsari, R. A. (2016). *Applying distributed and transformational leadership theories to increase opportunities for women in senior educational leadership in Saudi Arabia*. Eastern Michigan University.

Alhojailan, M. I. (2012). Thematic analysis: A critical review of its process and evaluation. *West east journal of social sciences*, 1(1), 39-47.

Allen, N., Grigsby, B., & Peters, M. L. (2015). Does leadership matter? Examining the relationship among transformational leadership, school climate, and student achievement. *International Journal of Educational Leadership Preparation*, 10(2), 1-22.

Alsubaie, M. A. (2016). Curriculum development: Teacher involvement in curriculum development. *Journal of Education and Practice*, 7(9), 106-107.

Alvior, M. G. (2014). The Meaning and Importance of Curriculum Development. Curriculum. In *Simply Educate Me*. <https://simplyeducate.me/2014/12/13/the-meaning-and-importance-of-curriculum-development/>

Amineh, R. J., & Asl, H. D. (2015). Review of constructivism and social constructivism. *Journal of Social Sciences, Literature and Languages*, 1(1), 9-16.

- Anderson, C., & Brion, S. (2014). Perspectives on power in organizations. *Annual Review of Organizational Psychology and Organizational Behaviour*, 1(1), 67-97.
- Anderson, M. (2017). Transformational leadership in education: A review of existing literature. *International Social Science Review*, 93(1), 1-13.
- Andriani, S., Kesumawati, N., & Kristiawan, M. (2018). The influence of the transformational leadership and work motivation on teachers performance. *International Journal of Scientific & Technology Research*, 7(7), 19-29.
- Gough, A., & Gough, N. (2016). The denaturation of environmental education: exploring the role of ecotechnologies. *Australian Journal of Environmental Education*, 32(1), 30-41.
- Anney, V. N. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of Emerging Trends in Educational Research and Policy Studies*, 5(2), 272-281.
- Antonakis, J. E., Cianciolo, A. T., & Sternberg, R. J. (2004). *The nature of leadership*. Sage Publications, Inc.
- Apuke, O. D. (2017). Quantitative research methods: A synopsis approach. *Kuwait Chapter of Arabian Journal of Business and Management Review*, 33(5471), 1-8.
- Ardoin, N. M., Bowers, A. W., & Gaillard, E. (2020). Environmental education outcomes for conservation: A systematic review. *Biological Conservation*, 241, 108224.
- Arshed, N., & Danson, M. (2015). *The Literature Review. Research Methods for Business and Management*. <https://dx.doi.org.1023912/978-1-910158-51-7-2790>
- Aspers, P., & Corte, U. (2019). What is qualitative in qualitative research. *Qualitative sociology*, 42(2), 139-160.
- Athman, J. A., & Monroe, M. C. (2001). Elements of Effective Environmental Education Programs. In *ERICA*. <https://eric.ed.gov/?id%4ED463936>
- Avasthi, A., Ghosh, A., Sarkar, S., & Grover, S. (2013). Ethics in medical research: General principles with special reference to psychiatry research. *Indian Journal of Psychiatry*, 55(1), 86-91.

Avissar, I., Alkaber, I., & Gan, D. (2017). The role of distributed leadership in mainstreaming environmental sustainability into campus life in an Israeli teaching college: A case study. *International Journal of Sustainability in Higher Education*. <https://doi.org/10.1108/IJSHE-07-2017-0105>

Baba, S. S. (n.d). The end of education is character. <https://saispeaks.sathyasai.org/discourse/end-education-character>

Bacon, J. P., & Ziepiewski, C. (2017). Environmental Education: The Need, The Challenges, and What We've Learned. *Environmental Education*, 3, 16-23.

Balcerzyk, D. 2021. "The Role of a Leader in Contemporary Organizations," *European Research Studies Journal*, 0(1), 226-240.

Bandura, A. (1978). Social Learning Theory of Aggression. *Journal of Communication*, 28(3), 12-29.

Bandura, A. (1985). Model of Causality in Social Learning Theory. In: Mahoney, M.J., Freeman, A. (eds) *Cognition and Psychotherapy*. Springer, Boston, MA. https://www.doi.org/10.1007/978-1-4684-7562-3_3

Barattucci, M., Presti, A. L., Bufalino, G., Jonsson, T., Teresi, M., & Pagliaro, S. (2020). Distributed Leadership Agency and Work Outcomes: Validation of the Italian and Its Relations with Commitment, Trust, and Satisfaction. *Brief Research Report Article: Frontier Psychology*, 11, 512. <https://www.doi.10.3389/fpsyg.2020.00512>

Barker, I. (2016). *Implementation and Perceived Effectiveness of Distributed Leadership in RESA a Schools in Southern West Virginia* (Doctoral dissertation). Marshall University

Barrow, J. M., & Khandhar, P. B. (2019). *Research Ethics*. StatPearls Publishing, Treasure Island.

Bartosh, O. (2003). *Environmental Education: Improving student achievement* (Masters dissertation). The Evergreen State College.

Baskett, S., & Miklos, E. (1992). Perspectives of Effective Headteachers. *Canadian Administrator*, 32(1), 1-10.

- Bass, B. M. (1985). *Leadership and Performance beyond Expectations*. New York, Free Press.
- Bass, B. M. (1998). *Transformational Leadership: Industry, Military and Educational Impact*. New Jersey, Lawrence Erlbaum Associates.
- Bass, B. M. (1999). Two decades of Research and Development in Transformational Leadership. *European Journal of Work and Organizational Psychology*, 8(1), 9-23.
- Bass, B. M., & Avolio, B. J. (1994). *Improving Organizational Effectiveness through Transformational Leadership*. Thousand Oaks, CA, Sage Publications.
- Bass, B. M. (1990). *Bass and Stogdill's Handbook of Leadership*. New York, Free Press.
- Baxte, P., & Jack, S. (2008). Qualitative case study methodology: Study design and Implementation for novice researchers. *The Qualitative Report*, 13(4), 544-559.
- Bayfield, A. (2020). *Distributed leadership: why it's worth getting right*. <https://www.tes.com/magazine/archive/distributed-leadership-why-its-worth-getting-right>
- Beaton, G. R. (2010). Why professionalism is still relevant. *Melbourne Legal Studies Research Paper*, 445, 1-24.
- Beck-Tauber, D. (2013). Transformational Leadership: Exploring its Functionality (Doctoral dissertation). University of Saints Gallen.
- Beierle, T. C. (2002). The quality of stakeholder-based decisions. *Risk Analysis*, 22(4), 739–749.
- Belgrade. (1975). *The Belgrade Charter: A Framework for Environmental Education*. UNESCO. <https://www.UNESCO.org>
- Bell, L., Bolam, R., & Cubillo, L. (2002). A systematic review of the impact of school leadership and management on student outcomes. In: *Research Evidence in Education Library*. London: EPPI Centre, Social Science Research Unit, Institute of Education, University of London.
- Bell, L., Bolam, R., & Cubillo, L. (2003). A systematic review of the impact of school leadership and management on student outcomes. In: *Research Evidence in Education Library*.

London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London

Bengtsson, S., & Lysgaard, J. A. (2022). Irony and environmental education: on the ultimate question of environmental education, the universe and everything. *Environmental Education Research*. <https://www.doi.org/10.1080/13504622.2022.2080809>

Bentley, J. H. (2013). Environmental Crises in World History. *Procedia Social and Behavioural Sciences*, 77, 108-115.

Bierly, C., Doyle, B., & Smith, A. (2016). Transforming schools: How distributed leadership can create more high-performing schools. <https://www.bain.com/insights/transforming-schools/>

Bisman, J. E., & Highfield, C. (2012). The Road Less Travelled: An Overview and Example of Constructivist Research in Accounting. *Australian Accounting, Business and Finance Journal*, 6(5), 3-22.

Black, P., & Wiliam, D. (1998). Inside the black box: Raising standards through classroom assessment. *Phi Delta Kappan*, 80(2), 139-148.

Blaikie, N. (2007). *Approaches to social enquiry*. Cambridge, Polity Press.

Boeren, E. (2019). Understanding Sustainable Development Goal (SDG) 4 on “quality education” from micro, meso and macro perspectives. *International review of education*, 65(2), 277-294.

Bogdan, R. C., & Biklen, S. K. (1998). *Qualitative research in education: An introduction to theory and methods*. Needham Heights, MA, Allyn & Bacon.

Boje, M. (2000). *Leaders: Transformational Leadership*. <https://www.business.nmsu.edu>

Bolden, R. (2011). Distributed Leadership in Organizations: A Review of Theory and Research. *International Journal of Management Reviews*, 31, 251-269.

Bolden, R., Petrov, G., & Gosling, J. (2009). Distributed leadership in higher education: Rhetoric and reality. *Educational Management Administration and Leadership*, 37(2), 257-277.

- Bolisani, E., Scarso, E., & Zieba, M. (2015, September). Emergent versus deliberate knowledge management strategy: literature review and case study analysis. In *European Conference on Knowledge Management* (p. 153). Academic Conferences International Limited.
- Botha, R. J., & Triegaardt, P. K. (2014). Distributive Leadership as Management Strategy for School Effectiveness: The Place and Role of the OSCAR Coaching Model in South African Schools. *Journal of Social Sciences*, 40(2), 251-260.
- Botha, R. J. (2014). The Place and Role of Distributed Leadership in Functionality and Effective South African Schools: Towards School Improvement. *Mediterranean Journal of Social Sciences*, 5(20), 1225-1232.
- Bowen, G. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal*, 9(2), 27-40.
- Braun, V., & Clarke, V. (2012). Thematic Analysis. In H. Cooper, P.M. Camic, D.L. Long, A.T. Panter, D. Rindskopf, & K.J. Sher. *APA Handbook of Research Methods in Psychology*, 2, 57-71.
- Bredo, E. (1994). Reconstructing educational psychology: Situated Cognition and Dewey a Pragmatism. *Educational Psychologist*, 29(1), 23-25.
- Brondizio, E., Leemans, R., & Solecki, W. (2014). *Current Opinion in Environmental Sustainability*. Texas, U.S.A, Elsevier Press Inc. <https://www.dx.doi.org/10.1016/j.cosust.2014.11.002CCBY-NC-SALicense>
- Brown, F. (2001). Finding environmental education in the National Science Education Standards. *Electronic Green Journal*, 1(14), 1-8.
- Brundtland, G. (1987). *Report of the World Commission on Environment and Development: Our Common Future*. United Nations General Assembly document A/42/427.
- Buleque, G., Dickie, A., & Nyaruwata, L. T. (2020). Curriculum Management Challenges, Obstacles for Government and Private Pupils' Academic Performance Results In Mozambique. *IOSR Journal of Business and Management*, 22(4), 35-46.

- Burke, R. (2021). Anticipatory Action Learning, Leadership, Strategy and Foresight: creating a successful future while enhancing results today. *Journal of Futures Studies*, 25(3), 85-92.
- Burns, J. M. (1978). *Leadership*. New York, Harper and Row publishers.
- Burns, J. M. (1979). *Leadership*. New York, Harper and Row publishers.
- Calixto, F. R. (2012). Investigación en educación ambiental (Research in environmental education). *Revista mexicana de investigación educativa*, 17(55), 1019-1033.
- Cameron, R. (2011). Mixed methods research: The ve Ps framework. *Electronic Journal of Business Research Methods*, 9(2), 1–13.
- Campbell, K. (2004). *Effective Writing for e-Learning Environments*. Hershey, PA, Information Science Publishing.
- Carl, A. (2005). The voice of the teacher in curriculum development: a voice crying in the wilderness? *South African Journal of Education*, 25(4), 223–228.
- Carl, A. E. (2011). Education for peace and a pedagogy of hope. *South African Journal of Higher Education*, 25(1), 129–144.
- Carr, L. T. (1994). The Strengths and Weaknesses of Quantitative and Qualitative Research: What Method for Nursing? *Journal of Advanced Nursing*, 20(4), 716-721.
- Carter, N., Bryant-Lukosius, D., DiCenso, A., Blythe, J., & Neville, A. J. (2014). The Use of Triangulation in Qualitative Research. *Oncology Nursing Forum*, 41(5), 545-547.
- Celine, H. (2013). *Environment Education Needs a Practical Approach in Modern Society*. <https://www.indiastudychannel.com/resources/158487-Environment-education-needs-practical-approach-modern-society.aspx>
- Chadwick, A. K. (1999). Environmental Education, in an Educational System wherein Academic Subjects no Longer Exist: Learning from the Swedish Experience (Masters dissertation). Lund University, Lund.
- Chalhoub-Deville, M., & Deville, C. (2008). *Utilizing Psychometric Methods in Assessment*. In E. Shohamy, & N.H. Hornberger (Eds.), *Encyclopedia of Language and Education*. 7, 211-224. New York, NY, Springer Science+ Business Media LLC.

Chalmers, D.J., Manley, D. & Wasserman, R. (2005). *Metametaphysics: New Essays on the Foundations of Ontology*. Oxford University Press. Dorr, C.

Changiz, T., Yamani, N., Tofighi, S. Zoubin, F., & Eghbali, B. (2019). Curriculum management/monitoring in undergraduate medical education: a systematized review. *BMC Medical Education*, 19, 1-60.

Chaturvedi, A., Kumari, R., & Singh, S. (2014). Environmental awareness through education. *An International Journal of Education*, 4(2), 9-13.

Check, J., & Schutt, R. K. (2012). *Research Methods in education*. London, Sage Publications.

Cheng, E. (2012). Knowledge strategies for enhancing school learning capacity. *International Journal of Educational Management*, 26(6), 577-592.

Cheng, N., & So, W. (2017). Challenges and opportunities for sustainable development on Chinese communities. In book: *Chinese science education in the 21st century: Policy, practice and research*. <https://www.doi:10.1007/978-94-017-9864-8-7>

Cherry, K. (2020). *Transformational Leadership: A Closer Look at the Effects of Transformational Leadership*. <https://www.verywellmind.com>

Chigona, A. (2017). Western cape subject advisors' perception of their preparedness for connected classrooms. *Electronic Journal of e-Learning*, 15(5),444-454

Chisholm, L., & Bagele, C. (2012). Contents of education policy change in Botswana and South Africa. *Quarterly Review of Comparative Education*, 42(4), 371-388.

Chukwura, F. A. (2017). The impact of elected leadership styles and behaviours on employee motivation and job satisfaction (10262875) (Doctoral dissertation). ProQuest Dissertations and Theses database.

Cisneros, F. (2016). *Successful School Turnarounds Using Transformational Leadership: Keys to Success in Creating a Foundation for a Successful School*. University of Houston. <https://www.uh.edu>9-16-issue>ci>

Clacherty, A. (1994). Trends in environmental education in South Africa. In: Levy S (ed.). *Projects speak for themselves 1993/1994*. Houghton: Sharon Levy.

Cochran, B. R. (2022). What is Curriculum Management? <https://www.practicaladultinsights.com/what-is-curriculum-management-htm>

Cohen, L., Manion, L., & Morrison, K. (2011). *Research Methods in Education*. London, Routledge.

Coman, M., & Cioruța, B. (2019). From Human-Environment Interaction to Environmental Informatics (III): the Social-Ecological Systems dynamics in Knowledge-based Society. *Hidraulica, 1*, 124–135. <https://doi.org/10.13140/RG.2.2.28436.35203/1>

Connolly, P. (2007). *Quantitative data analysis in education: A critical introduction using SPSS*. London, Routledge.

Cooper, G. (2012). *Examining the Transformational and Distributive Leadership Styles of Secondary Principals: A Mixed Methods Study* (Doctoral dissertation). Texas Tech University.

Copeland, M. A. (2003). Leadership of inquiry: Building and sustaining capacity for school improvement. *Educational Evaluation and Policy Analysis, 25*(4), 375-395.

Corbin, J., & Strauss, A. (2008). *Basics of Qualitative Research*. London, Sage Publications Ltd.

Cowrie, T. L. (1997). The role played by environmental education in the secondary school geography syllabus in a future South Africa (Doctoral dissertation). University of Natal, South Africa.

Creswell, J. W. (2002). *Educational Research: planning, conducting and evaluating quantitative and qualitative research*. Person, South Africa.

Creswell, J. W. (2002). *Research design: qualitative quantitative and mixed method approaches*. Sage Publications.

Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative and Mixed Method Approaches*. Los Angeles, Sage Publications.

Creswell, J. W. (2015). *Educational Research: Planning, conducting and evaluating quantitative and qualitative research*. Boston, MA, Pearson.

- Crossman, A. (2018). *Understanding Purposive Sampling: An Overview of the Method and Its Applications*. <https://www.thoughtco.com>
- Crow, G. & Wiles, R. (2008). Managing Anonymity and Confidentiality in Social Research: The Case of Visual Data in Community Research. *ESRC National Centre for Research Methods*, 8(8), 1-14.
- D'Anjou, L., Steijn, A., & Van Aarsen, D. (1995). Social position, ideology, and distributive justice. *Social Justice Research*, 8(4), 351-384.
- Daft, R. L., & Marcic, D. (2006). *Understanding Management*. Mason, Thomson Southwestern.
- Damoah, B., & Adu, E. O. (2020). Teacher's awareness of the integrated environmental education curriculum in South Africa. *e-Bangi*, 17(6), 280-295.
- Dampson, D. G., Havor, F. M., & Laryea, P. (2018). Distributed Leadership an Instrument for School Improvement: The Study of Public Senior High Schools in Ghana. *Journal of Education and e-Learning Research*, 5(2), 79-85.
- Davies, A. (2020). *Environmentalism*. International Encyclopedia of Human Geography. Elsevier, 259-264.
- Day, M. T. (1998). *Ideologies of Organisational Change in Academic Library*. https://www.ideals.illinois.edu/bitstream/handle/2142/8187/librarytrendsv46i4e_opt.pdf
- De Sousa, L. O., Richter, B. W., & Raath, S. P. (2017). Sustainable Environmental Management Indicators in South African Primary Schools. *Sustainability*, 9(854), 1-23.
- DeJonckheere, M., & Vaughn, L. M. (2019). Semi-structured interviewing in primary care research: a balance of relationship and rigour. *Family Medicine and Community Health*, 7. <https://www.doi:10.1136/fmch-2018-000057>
- Del Carmen Conde, M., & Sanchez, J. S. (2010). The School Curriculum and Environmental Education: A School Environmental Audit Experience. *International Journal of Environmental and Science Education*, 5(4), 477–494. <http://files.eric.ed.gov/fulltext/EJ908944.pdf>

Delgado, M. L. (2014). Democratic leadership in middle schools of Chihuahua Mexico: Improving middle schools through democracy. *Journal of International Education and Leadership*, 4(1), 1-12.

Denzin, N. K., & Lincoln, Y. S. (1998). *The landscape of qualitative research: Theories and issues*. London, Sage Publications.

Denzin, N. K. (1989). *Interpretive Interactionism*. Newbury Park, Sage publications.

Denzin, N. K., & Lincoln, Y. S. (2002). *The Qualitative Inquiry Reader*. London, Sage Publications.

Department of Basic Education (DBE). (2012). *National Protocol for Assessment Grades R – 12*. Pretoria, Government Printers. <http://www.education.gov.za>

Department of Basic Education. (2013). *Annual performance plan 2013–2014*. Pretoria, Government Printers
<http://www.education.gov.za/LinkClick.aspx?fileticket=SA2WZvctNMM%3D&tabid=358&mid=1263>

Department of Basic Education. (2013a). *Annual performance plan 2013–2014*. Pretoria, Government Printers
<http://www.education.gov.za/LinkClick.aspx?fileticket=SA2WZvctNMM%3D&tabid=358&mid=1263>

Department of Education. (1995). *White Paper on Education and Training: Notice 196 of 1995*. Parliament of the Republic of South Africa, Cape Town.

Department of Education. (2003). *Report to the Minister. A review of the financing, resourcing and costs of education in public schools*. Pretoria, Government Printer

Department of Education. (2003a). *Plan of Action: Improving access to free & quality basic education for all*. Pretoria, Government Printer.

Department of Environmental Affairs and Tourism. (1998). *EIA Regulations: Implementation of sections 21, 22 and 26 of the Environment Conservation Act: Guideline Document*. Pretoria, Government Printer.

Derry, S. J. (1999). A fish called peer learning: Searching for common themes. *Cognitive perspectives on peer learning*, 9(1), 197-211.

Díaz, G. G., Camarena, G. B., & Mirón, J. C. (2019). La educación ambiental: la práctica docente y la perspectiva del estudiante. R. Calixto & LM Martínez. *Educación Ambiental en Escuelas de Educación Básica*. Recuperado en http://redie.mx/librosyrevistas/libros/e_ambiental.pdf.

DiFranza, A. (2019). Transformational leadership: How to inspire innovation in the workplace. Retrieved May, 23, 2021. Northeast University.

Dimmock, C., & Wildy, H. (1992). School-based management and its linkage with the curriculum in an effective secondary school. *International Congress for School Effectiveness and Improvement*, 1(1), 1-31.

Downton, J. V. (1973). *Rebel leadership: Commitment and charisma in the revolutionary process*. Free Press.

Drake, L. (2004). *Mind in Society: The development of higher psychological processes*. Cambridge, Harvard University Press.

Drake, S. M. (2012). *Creating standards-based integrated curriculum: The common core state standards edition*. Corwin Press, CA.

Draper, S. (2013). *Social constructivism*. <https://www.psy.gla.ac.uk>

Du Plessis, L. E. (2005). *The implementation of outcomes-based education in the Eastern Cape-A management perspective at micro level* (doctoral dissertation). University of South Africa, Pretoria.

Dudovskiy, J. (2018). *The Ultimate Guide to Writing a Dissertation in Business Studies: A Step-by-Step Assistance*. Business research methodology.

Dunlap, R. E., & Jorgenson, A. K. (2017). *Environmental Problems*. <https://www.researchgate.net/publication/269409535>

- Duval, N., & Kanene, K. M. (2016). Implementation of Environmental Education (EE) in History in Seychelles: The Case of the Beau Vallon Secondary School. *International Journal of Scientific Research in Education*, 9(2), 105-114.
- Dyczkowska, J., & Dyczkowski, T. (2015). Democratic or Autocratic Leadership Style? Participative Management and its Links to rewarding Strategies and Job Satisfaction in SMEs. *Athens Journal of Business & Economics*, 4(2), 193-218.
- Edsand, H., & Broich, T. (2020). The Impact of Environmental Education on Environmental and Renewable Energy Technology Awareness: Empirical Evidence from Columbia. *International Journal of Science and Mathematics Education*, 18, 611-634.
- Ekanayake, S. Y., & Wishart, Y. (2014). Integrating mobile phones into teaching and learning: A case study of teacher training through professional development workshops. *British Journal of Educational Technology*, 46(1), 173-189.
- Ekka, P. M. (2021). A review of observation method in data collection process. *International Journal for Research Trends and Innovation*, 6(12), 17-19.
- Elfving, M., & Ristimäki, S. (2011). *Environmental Education in Rural Development: A Case Study in Mecubúri District, Mozambique* (Masters dissertation). Linnaeus University, Växjö, Sweden.
- Elmore, R. F. (2000). *Building a New Structure for School Leadership*. Washington, Albert Shanker Institute.
- El-Nahass, N. M. (2019). *Curriculum management*. Dar Al-Wafa for Printing and Publishing. University of Alexandria, Egypt.
- Elo, S., Kaarlainen, M., Kanste, O., Polkki, T., Utriainen, K., & Kyngas, H. (2014). Qualitative Content Analysis: A Focus on Trustworthiness. *SAGE Open*, 4, 1-10. <https://doi.org/10.1177/2158244014522633>
- Erhabor, N. I., & Don, J. U. (2016). Impact of Environmental Education on the Knowledge and Attitude of Students towards the Environment. *International Journal of Environmental and Science Education*, 11(12), 5367-5375.

- Erkal, S., & Gürsoy, N. (2013). Importance of Environmental Education to Achievement of Sustainable Development. *Global Journal on Advances in Pure & Applied Sciences*, 1, 1035-1038. <http://www.world-education-center.org/index.php/paas>
- Ernest, P. (1999). *Social Constructivism as a Philosophy of Mathematics*. Albany, State University of New York Press.
- Ernst, J. (2007). Factors Associated With K-12 Teachers' Use of Environment-Based Education. *Journal of Environ Education*, 38, 15–32.
- Etzioni, A. (1965). Dual leadership in complex organizations. *American Sociological Review*, 30, 688–698.
- Fazio, X., & Karrow, D. D. (2013). Exploring the Professional Characteristics and Context of School Based Environmental Education “Leaders”. *Alberta Journal of Environmental Research*, 59(47), 613–629.
- Felder, R., & Brent, R. (1996). Navigating the bumpy road to student-centered instruction. *College Teaching*, 44(2), 43–47.
- Fiala, R. (2007). Educational Ideology and the School Curriculum. In: Benavot, A., Braslavsky, C., Truong, N. (eds) *School Knowledge in Comparative and Historical Perspective*. CERC Studies in Comparative Education, 18. Springer, Dordrecht. https://doi.org/10.1007/978-1-4020-5736-6_2
- Fien, J. (1993). *Education for the Environment: Critical Curriculum Theorising and Environmental Education*. Deakin University Press, Geelong, Victoria.
- Filho W. L., & Brandli, L. (2016). *Engaging stakeholders in education for sustainable development at university level*. Springer. <https://doi.org/10.1007/978-3-319-26734-0> on
- Flath, B. (1989). The Principal as Instructional Leader. *ATA Magazine*, 69(3), 19-49.
- Fleetwood, D. (2020). *Non-Probability Sampling: Definition, Types, Examples, and Advantages*. <https://www.questionpro.com>

Flick, U. (2011). *Introducing Research Methodology: A Beginner's Guide to doing a Research Project*. London, Sage Publications Ltd.

Franklin, B. (n.d). *Tell me and I forget. Teach me and I remember. Involve me and I learn.*
https://www.brainyquote.com/quotes/benjamin_franklin_383997

Fraser, S., & Robinson, C. (2004). Paradigms and philosophy. In S. Fraser, V. Lewis, S. Ding, M. Kellett & C. Robinson (Eds.), *Doing Research with Children and Young People*. London, Sage publications.

Frazen, R. L. (2017). Environmental Education in Teacher Education Programs: Incorporation and Use of Professional Guidelines. *Journal of Sustainability Education*, 16, 1-16.

Fu, J. S. (2013). ICT in Education: A Critical Literature Review and Its Implications. *International Journal of Education and Development using Information and Communication Technology*, 9(1), 112-125.

Fullan, M. (1991). *The New Meaning of Educational Change*. New York, Teachers College Press

Fullan, M. (2007). *The New Meaning of Educational Change*. New York, Teachers College Press.

Futcher, C. (2019). *Transformational Leadership Advantages and Disadvantages Explored.*
<https://www.info.cavendishwood.com>

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behaviour*, 26, 331-362.

Ganta, T. G., Rachel, K. V., & Uppuleti, S. R. (2018). Environmental Education to Mitigate Environmental Decay and Promote Sustainable Development. *International Journal of Agricultural Sciences*, 2(2), 67-71.

Gastil, J. (1994). A definition and illustration of democratic leadership. *Human Relations*, 47, 954-971.

Gauteng Department of Education. (1996). *Working documents on curriculum change*. Pretoria, Government Printer.

Gentles, S. J., Charles, C., Ploeg, J., & McKibbin, K. A. (2015). Sampling in Qualitative Research: Insights from an Overview of the Methods Literature. *The Qualitative Report*, 20(11), 1772-1789. McMaster University. Hamilton, Ontario, Canada

Gibbs, M. (2019). Living Sustainably: Sustainable literacy is a good goal for 2019. <https://www.blogs.hope.edu/sustainability-institute/smart-energy/living-sustainably-sustainable-literacy-is-a-good-goal-for-2019/>

Glatthorn, A., Boschee, F., Whitehead, B., & Boschee, B. (2012). *Curriculum Leadership Strategies for development and implementation*. London, Sage Publications.

Goksoy, D. (2016). Analysis of the relationship between shared leadership and distributed leadership. *Eurasian Journal of Educational Research*, 65, 295-312.

Goksoy, S. (2015). Distributed Leadership in Educational Institutions. *Journal of Education and Training Studies*, 3(4), 110-118.

Goldberg, G., & Houser, R. (2020). *Teacher as Decision-Maker vs. Teacher as Curriculum Implementer*. <https://blog.stenhouse.com/teacher-as-decision-maker-vs.-teacher-as-curriculum-implementer-0>

Gomes, A. R. (2014). Transformational Leadership: Theory, Research and Application to Sports. In C. Mohiyeddini (Ed.), *Contemporary Topics and Trends in the Psychology of Sports*. Science Publishers, New York, Nova.

Gomez-Hurtado, I., Gonzalez-Falcon, I., Coronel-Llamas, J. M., & Garcia-Rodriguez, M. (2020). Distributed Leadership or Distributing Tasks? The Practice of Distributed Leadership in Two Spanish Secondary Schools. *Education Sciences*, 10, 122.

Gough, A. (2016). Tensions around the teaching of environmental sustainability in schools. In T. Barkatsas & A. Bertram (Eds.), *Global learning in the 21st century*, 83–102. Sense Publishers.

Gough, N., & Gough, A. (2010). Environmental education. In: Kridel, C., *Encyclopedia of Curriculum Studies*. Thousand Oaks, California, Sage Publications.

Graff. (n.d). *Mixed research approach.*

https://samples.jbpub.com/9781449625917/25917_ch03_045_064.pdf

Graham-Jolly, M. (2003). The nature of curriculum change management (In Coleman, M., Graham-Jolly, M. & Middlewood, *Managing the curriculum in South African schools*. London, Commonwealth Secretariat.

Grant, C., & Osanloo, A. (2014). Understanding, Selecting and Integrating a Theoretical Framework in Dissertation Research: Creating the Blueprint for “House” Administrative Issues. *Journal of Connecting Education, Practice and Research*, 12-22.
<https://www.doi.10.5929/2014.429>

Gredler, M. E. (1997). *Learning and Instruction: Theory into Practice*. Upper Saddle River, NJ, Prentice-Hall.

Green, R. L. (2010). *The Four Dimensions of Principal Leadership: A Framework or Leading 21st Century Schools*. Boston, MA, Allyn and Bacon.

Grenda, J. P. (2011). *Instances and Principles of Distributed Leadership: A Multiple Case Study of Illinois Middle School Principal's Leadership Practices* (Doctoral dissertation). University of Illinois, Urbana-Champaign.

Grimm, J. W. (2010). Effective leadership: making the difference. *Journal of Emergency Nursing*, 36(1), 74-77.

Gronn, P. (2000). Distributed Properties: A New Architecture for Leadership. *Educational Management Administration*, 28, 317-338.

Gronn, P. (2010). Where to next for educational leadership? In: Bush, T, Bell, L, Middlewood, D. (eds.). *The principles of Educational Leadership and Management*. London, Sage Publication.

Grover, V. K. (2015). Research Approach: An Overview. *Golden Research Thought*, 4(3), 1-7.

Guba, E. G., & Lincoln. Y. S. (1989). *What is This Constructivist Paradigm Anyway? in Fourth Generation Evaluation*. London, Sage Publications.

- Guba, E. G. (1990). *The paradigm dialogue*. Sage Publications, Inc.
- Gunawan, J. (2015). Ensuring Trustworthiness in Qualitative Research. *Belitung Nursing Journal*, 1(1), 10-11.
- Gunduz, S., & Erdogus, M. (2017). The Role of Environmental Education of New Curriculum in North Cyprus. *Open Access Peer-Reviewed Chapter*. <https://www.10.5772/intechopen.71561>
- Gustafsson, J. (2017). *Single case studies vs. multiple case studies: A comparative study* (Literature review). <http://www.diva-portal.org/smash/get/diva2:1064378/FULLTEXT01.pdf>
- Hafsa, N. (2019). Mixed Methods Research: An Overview for Beginner Researchers. *Journal of Literature, Languages and Linguistics*, 58. <https://www.DOI:10.7176/JLLL>
- Ham, S., & Sewing, D. (1988). Barriers to Environmental Education. *The Journal of Environmental Education*, 19(2), 17-24.
- Hammersley, M. (2013). *What is Qualitative Research?* London, Bloomsbury.
- Hammersley, M., & Traianou, A. (2012). Ethics and Educational Research. *British Educational Research Association*. <https://www.bera.ac.uk>
- Harris, A. (2003). Distributed leadership in schools: Leading or Misleading? *Management in Education*, 16(5), 10-13.
- Harris, A. (2003). Teacher Leadership and School Improvement. In: Harris A, Day C, Hopkins D, Hadfield M, Hargreaves A and Chapman C (Eds) *Effective Leadership for School Improvement*. London, Routledge Falmer.
- Harris, A. (2005). Leading or Misleading? Distributed Leadership and School Improvement. *Journal of Curriculum Studies*, 37(3), 255-265.
- Harris, A. (2008). Distributed Leadership: According to the Evidence. *Journal of Educational Administration*, 46(2), 172-188.
- Harris, A. (2009). Distributed Leadership: What we Know. In Harris, A., *Distributed Leadership: Different Perspectives*. Dordrecht: Springer, 11–21.

- Harris, A. (2014). *Distributed leadership matters: Perspectives, practicalities, and potential*. Corwin Press. <https://dx.doi.org/10.4135/9781483332574>
- Harris, A., & Jones, M. (2018). The Dark Side of Leadership and Management. *School Leadership and Management*, 38(5), 1-8.
- Harrison, H., Birks, M., Franklin, R.C., & Mills, J. (2017). Case Study Research: Foundations and Methodological Orientations. *Forum Qualitative Social Research*, 18, 17.
- Harry, B., & Lipsky, M. (2014). Qualitative Research on Special Education Teacher Preparation. In M. McCray, T. Brownell, & B. Lignugaris/Kraft (Eds.), *Handbook of Research on Special Education Teacher Preparation* (pp.445-460). Taylor and Francis. <https://www.doi.org/10.4324/9780203817032>
- Hebe, H. (2019). Locating the Position of Environmental Education in the South African School Curriculum: The Case of Grade R. *EURASIA Journal of Mathematics, Science and Technology Education*, 15(9), 1-11.
- Hermalin, B. (1998). Toward an Economic Theory of Leadership: Leading by Example. *American Economic Review*, 88(5), 1188-1206.
- Hermann, K. R. (2016). The Principal's Role: Distributed Leadership (Doctoral dissertation). Old Dominion University. https://www.digitalcommons.odu.edu/efl_etds/8
- Herzog, L. (2015). Distributive Justice, Feasibility Gridlocks, and the Harmfulness of Economic Ideology. *Ethical Theory and Moral Practice*, 18(5), 957–969.
- Hess, D. E. (2002). Teaching Controversial Public Issues Discussions: Learning from Skilled Teachers. *Theory and Research in Social Education*, 30(1), 10–41.
- Hierarchy. (2022, May 12). In Wikipedia at <https://www.collinsdictionary.com>
- Hogue, S. L. (2010). *The impact of the Katy Management of Automated Curriculum system on planning for learning, delivery of instruction and evaluation of student learning as perceived by teachers in the Katy Independent School District in Texas*. Texas A&M University.
- Houseman, M. (2015). The hierarchical relation: A particular ideology or a general model? *HAU Journal of Ethnographic Theory*, 5(1), 251.

- Howell, J. M., & Avolio, B. J. (1993). Transformational Leadership, Transactional Leadership, Locus of Control, and Support for Innovation: Key Predictors of Consolidated-Business-Unit Performance. *Journal of Applied Psychology*, 78(6), 891-902.
- Hudson, S. J. (2001). Challenges for environmental education: Issues and ideas for the 21st century. *BioScience*, 51(4), 283–288.
- Hughes, P. (2010). Paradigms, methods and knowledge in G. MacNaughton, S. Rolfe and I. Siraj-Blatchford, *Doing Early Childhood Research*. Maidenhead, Open University Press.
- Humphrey, E. (2010). *Distributed Leadership and Its Impact on Teaching and Learning* (Doctoral dissertation). University of Ireland, Maynooth.
- Hytten, K., & Bettez, S. C. (2011). Understanding education for social justice. *Educational foundations*, 25, 7-24.
- Ibrahim, Y., Arshad, R. B., & Salleh, D. (2017). Stakeholder perceptions of secondary education quality in Sokoto State, Nigeria. *Quality Assurance in Education*, 25, 248-267.
- Idris, F., Hassan, Z., Ya'acob, A., Gill, S. K., & Awal, N. A. M. (2012). The Role of Education in Shaping Youth's National Identity. *Procedia - Social and Behavioural Sciences*, 59, 443–450.
- Igwenagu, C. (2016). *Fundamentals of Research Methodology and Data Collection*. LAP Lambert Academic Publishing.
- Imenda, S. (2014). Is There a Conceptual Difference between Theoretical and Conceptual Frameworks? *Journal of Social Sciences*, 38(2), 185-195.
- International Environment Forum (IEF). (2020). Redefining success: a way to save the planet and ourselves, 22(2). <https://www.iefworld.org/index.php/news/128>
- Inwood, H. J. (2013). Cultivating artistic approaches to environmental learning: Exploring eco-art education in elementary classrooms. *International Electronic Journal of Environmental Education*, 3(2), 129-145.
- Irwin, D. (2010). *Weaving the threads of education for sustainability and outdoor education* (Doctoral dissertation). University of Canterbury, New Zealand.

Irwin, P. (1990). The Concept of EE and the Development of EE in South Africa. *South African Journal*, 11, 1-5.

Irwin, P. R., & Lotz-Sisitka, H. (2005). A history of Environmental Education in South Africa. In C. Loubser (Ed.), *Environmental Education: Some South African perspectives*. Pretoria, Van Schaik publishers.

International Union Conservation of Nature. (1970). *International working meeting on environmental education in the school curriculum*. Carson City/Nevada, June/July. <https://portals.iucn.org/library/sites/library/files/documents/Rep-1970-001.pdf>

International Union Conservation of Nature. (1971). *Education and the environment. Papers of the Nevada Conference of 1970 and the Zurich Conference of December 1971*. IUCN Publication New Series, Morges.

Jacobs, M., Vakalisa, N. C. G., & Gawe, N. (2011). *Teaching-learning dynamics*. Cape Town, Pearson.

Jess, M., Carse, N., & Keay, J. (2016). The primary physical education curriculum process: More complex than you think!! *Education*, 44(5), 502-512.

Jiang, W., Zhao, X., & Ni, J. (2017). The Impact of Transformational Leadership on Employee Sustainable Performance: The Mediating Role of Organizational Citizenship Behaviour. *Sustainability*, 9, 1-17.

Jickling, B., & Wals, A. E.J. (2008). Globalization and Environmental Education: Looking Beyond Sustainable Development. *Journal of Curriculum Studies*, 40(1), 1–21.

Jita, L. C., & Mokhele, M. L. (2013). The Role of the Lead Teachers in Instructional Leadership: A Case Study of Environmental Learning in South Africa. *Education as Change*, 17, 123–135.

Jobs, S. (2022). Quotes about people. <https://quotefancy.com/quote/911456/Steve-Jobs-Management-is-about-persuading-people-to-do-things-they-do-not-want-to-do>

Johnson, C. (2005) Becoming compatible: Curriculum and environmental thought. *Journal of environmental Education*, 24(2), 2-11.

- Johnson, G., & Scholes, K. (2002). *Exploring Corporate Strategy*. Prentice Hall.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher*, 33(7), 14-26.
- Jones, S., Lefoe, G., Harvey, M., & Ryland, K. (2012). Distributed Leadership: a collaborative framework for academics, executives, and professionals in higher education. *Journal of Higher Education Policy and Management*, 34(1), 67-78.
- Joseph, C. N. (2014). *Investigating the inclusion of environmental learning in life science grade 10 curriculum: A case study of three Namibian schools* (Masters dissertation). Grahamstown, Rhodes University.
- Jovanovic, D., & Ciric, M. (2016). Benefits of Transformational Leadership in the Context of Education. *The European Proceedings of Social & Behavioural Sciences*. <https://www.pdfsemanticscholar.org>
- Julnes, G. (2015). Managing Evaluation Theories, Practices, and Communities: Reflections on Dahler-Larsen's The Evaluation Society. *American Journal of Evaluation*, 36(4), 584-600.
- Juneja, J. K. (2022). Understanding Leadership and its Various Dimensions: A Mini-Review. *Innovare Journal of Education*, 10(2), 9-11.
- Kadji, C. (2002). *Evaluation of whole school environmental education, Kansas association for conservation and environmental education*. <https://www.kacee.org>
- Kadushin, C., Hecht, S., Sasson, T., & Saxe, L. (2008). Triangulation and Mixed Methods Designs: Practicing What We Preach in the Evaluation of an Israel Experience Educational Program. *Field Methods*, 20(1), 46-65.
- Kaiser, K. (2009). Protecting Respondent Confidentiality in Qualitative Research. *Qualitative Health Research*, 19(11), 1632-1641.
- Kaklauskas, A., & Gudauskas, R. (2016). *17-Intelligent decision-support systems and the Internet of Things for the smart built environment*. In: Pacheco-Torgal, F., Rasmuss, E., Granqvist, C. G., Ivanov, V., Kaklauskas, A. & Makonin, S. Start-Up Creation. Woodhead Publishing.

- Kalimaposo, K., & Muyela, G. (2014). Mainstreaming Environmental Education in the School and Teacher Education Curriculum in Zambia. *Standard Global Journal of Education Research, 1*(4), 76-88.
- Kamal, S.S.L. (2019). Research Paradigm and the Philosophical Foundations of a Qualitative Study. *PEOPLE: International Journal of Social Sciences, 4*(3), 1386-1394.
- Kapur, R. (2019). Development of Management Skills among Students. *Multidisciplinary International Journal, 0*(5), 9-18.
- Karatekir, K. (2019). Model review related to the effects of teachers' levels of ecological citizenship. *International Electron Journal Environmental Education, 9*(1), 46–61.
- Katsoulakos, M. N., Misthos, N. M. L., Doulos, G. L., & Kotsios, S.V. (2016). Chapter8; Environment and Development (499-570). Pouloupoulos, M.S. & Ingtezakis, J.V. (Eds), *Environmental and Development; Basic Principle, Human Activity, and Environmental Implication*. London, Elsevier.
- Kauber, P. (1986). *What's wrong with a Science of MIS?* Proceedings of the 1986 Decision Science Institute, Honolulu, HA.
- Kaushik, V., & Walsh, C. A. (2019). Pragmatism as a Research Paradigm and Its Implications for Social Work Research. *Social sciences, 8*, 1-17.
- Kawulich, B. (2012). Collecting data through observation. In C. Wagner, B. Kawulich, & M. Garner (Eds.), *Doing Social Research: A global context* (pp. 150–160). New York, McGraw Hill
- Kehr, H. M., Graff, D., & Bakaç, C. (2022). Followers' Motives as Moderators of the Effects of Transformational Leadership Behaviours on Follower Outcomes and Leaders' Influence. *Journal of Business Psychology*. <https://doi.org/10.1007/s10869-022-09826-y>
- Kellerman, M. (2007). Building relationships. In: *Collaboration Assessment Guide and Tool* (p. 11). United Way of Canada - Centraide Canada.

- Ketlhoilwe, M. (2003). Environmental Education Policy Implementation in Botswana: The Role of Secondary Education Officers and School Heads. *Southern African Journal of Environmental Education*, 20, 75-84.
- Khumalo, P. (2014). Improving the Contribution of Cooperatives as Vehicles for Local Economic Development in South Africa. *African Studies Quarterly*, 14(4), 63-81.
- Kilicoglu, D. (2018). Understanding Democratic and Distributed Leadership: How Democratic Leadership of School Principals Related to Distributed Leadership in Schools? *Educational Policy Analysis and Strategic Research*, 13(3), 6-23.
- Kim, B. (2001). Social Constructivism. In M. Orey (Eds.), *Emerging Perspectives on Learning, Teaching and Technology*. <https://projects.coe.uga.edu/epltt/>
- King, D. (2002). The Changing Shape of Leadership. *Educational Leadership*, 59(8), 61-63.
- Kinnear, K. (2019). *Why Environmental Education is Important for Kids*. <https://www.rubicon.com/blog/environmental-education-for-kids/>
- Kirby, P., King, M., & Paradise, L. (1992). Extraordinary Leadership in Education: Understanding Transformational Leadership. *Journal of Educational Research*, 85(5), 393-311.
- Kirk, D. (2014). A defining time for physical education futures? Exploring the legacy of Fritz Duras. *Asia-Pacific Journal of Health, Sport and Physical Education*, 5(2), 103–116.
- Kivunja, C. (2018). Distinguishing Between Theory, Theoretical Framework and Conceptual Framework: A Systematic Review of Lessons from the Field. *International Journal of Higher Education*, 7(6), 44.
- Kivunja, C., & Kuyini, A. B. (2017). Understanding and Applying Research Paradigms in Educational Contexts. *International Journal of Higher Education*, 6(5), 26-41.
- Klein, H. K., & Myers, M. D. (1999). A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems. *MIS Quarterly*, 23(1), 67-93.
- Klingborg, D. J., Moore, D. A., & Varea-Hammond, S. (2006). What is leadership? *Journal of Veterinary Medical Education*, 33(2), 280-283.

Kolzow, D. R. (2014). *Leading from within: Building Organizational Leadership Capacity*.
<https://www.iedconline.org>

Komane, F. N. (2005). The Assessment of Environmental Awareness of the Secondary School Learners in the Mabopane District (Masters dissertation). North-West University, Potchefstroom.

Korstjens, I., & Moser, A. (2017). Series: Practical Guidance to Qualitative Research. Part 4: Trustworthiness and Publishing. *European Journal of General Practice*, 24(1), 120-124.

Kostova, Z., & Atasoy, E. (2008). Methods of successful learning in environmental education. *Journal of Theory and Practice in Education*, 4, 49-78.

Kothari, C.R. (2004). *Research methodology: Methods and Techniques*. New Delhi, New Age International Publishers.

Krishnamurthy, R., Jonathan, M., Srinivasalu, S., & Glaeser, B. (2018). *Coastal Management: Global Challenges and Innovations*. Elsevier Academic Press, UK.

Kristjansson, A. L., Sigfusson, J., Sigfusdottir, I. D., & Allegrante, J. P. (2013). Data collection procedures for school-based surveys among adolescents: the youth in Europe study. *Journal of School Health*, 83(9), 662–667.

Kruger, M., Ndebele, P., & Horn, L. (2014). *Research Ethics in Africa: A Resource for Research Ethics Committees*. South Africa, Sun MeDIA, Sun Press.

Kufi, E. F. (2013). The role of different stakeholders in Ethiopia in the improvement of educational quality. *Journal of Research Studies in Education*, 2(1), 11-24.

Kukla, A. (2000). *Social Constructivism and the Philosophy of Science*. New York, Routledge.

Kumar, R. (2011). *Research Methodology: A Step-by-Step Guide for Beginners*. New Delhi, Sage Publications.

Kurangi, B. K., Nanjwade, B. K., & Jangade, N. M. (2017). Education methodology: curriculum management. *World Journal of Pharmacy and Pharmaceutical Sciences*, 6(2), 1385–1396.

- Kwee, C. T. T. (2021). I want to teach sustainable development classroom: A case study of incorporating sustainable development teaching. *Sustainability (Switzerland)*, *13*(8). <https://doi.org/10.3390/su13084195>
- L abane, N. (2009). *Planning and managing curriculum implementation in rural schools* (Masters dissertation). Nelson Mandela Metropolitan University.
- Langkos, S. (2014). *Chapter 3-Research Methodology: Data collection method and Research tools*. Retrieved on May 22, 2020.
- Langos, S. (2014). *Athens as an International Tourism Destination: An Empirical Investigation to the City's Imagery and the Role of Local DMO's* (Masters dissertation). University of Derby.
- Larsson, S. (2009). A pluralist view of generalization in qualitative research. *International Journal of Research & Method in Education*, *32*,1, 25-38.
- Lasater, K. (2016). School leader relationships. *Journal of School Administration Research and Development*, *1*(2), 19–26.
- Latour, B. (1987). *Science in Action: How to Follow Scientists and Engineers through Society*. Philadelphia, PA, Open University Press.
- Lay, Y. (2019). Integrating Environmental Education and ICT. *EURASIA Journal of Mathematics, Science and Technology Education*, *15*(5), 1-3.
- Le Grange, L., & Reddy, C. (1997). Environmental Education and Outcomes-based Education in South Africa: A Marriage Made in Heaven? *Southern African Journal of Environmental Education*, *17*, 12-18.
- Le Roux, C. S. & Maila, M. W. (2004). *Issues and Challenges Regarding Environmental Education Policy Implementation*. Pretoria, University of South Africa.
- Lederman, N. G., & Lederman, J. S. (2015). What is A Theoretical Framework? A Practical Answer. *Journal of Science Teacher Education*, *26*, 593-597.
- Lee, M. (2014). Transformational Leadership: Is It Time for a Recall? *International Journal of Management and Applied Research*, *1*(1), 18-29.

Leedy, P. D. & Ormord, J. E. (2013). *Practical Research: Planning and Design*. Upper Saddle River, New Jersey, Prentice Hall.

Leithwood, K. (1994). Leadership for School Restructuring. *Journal of Educational Administration Quarterly*, 30(4), 498-518.

Levers, M. J. D. (2013). Philosophical Paradigms, Grounded Theory, and Perspectives on Emergence. *South African General Education Journal*, 3(4), 1-6.

Lewis, J. S., Farnsworth, M. L, Burdett, C. L., Theobald, D.M., Gray, M., & Miller, R. S. (2017). Biotic and abiotic factors predicting the global distribution and population density of an invasive large mammal. *Scientific Repository*, 9(7), 44152.

Lieberman, A., & Miller, L. (2005). Teachers as Leaders. *The Educational Forum*, 69(2), 151-162.

Lister, T. A. J., & Cameron, R. J. (1986). Curriculum Management (Part 1): Planning Curriculum Objectives. *Educational Psychology in Practice, theory, research and practice in educational psychology*, 2(1), 6-14.

Liu, Y. (2017). *How Leadership is Distributed and how it is Associated with Teaching Quality? A Cross-Country Study with the TALIS 2013*. East Lansing: ProQuest, UMI Dissertations Publishing, Michigan State University.

Llopis, G. (2020). Leadership will change forever after the coronavirus pandemic. *Forbes*. <https://www.forbes.com/sites/glennllopis/2020/04/06/leadership-will-change-forever-after-the-coronavirus-pandemic/#8a642bf61eb9>

Loubser, C., & Simalumba, P. (2016). The Implementation of Environmental Education in Geography (Grade 8-10) in the Caprivi Region, Namibia. *Southern African Journal of Environmental Education*, 32, 51-65.

Louw, W. (2015). *Let not focus on the matric results*. https://www.groupup.org.za/article/lete28099-not-focus-only-matric-results_2578

Lucas, A. M. (1972). Environment and Environmental Education: Conceptual Issues and Curriculum Implications (Doctoral dissertation). Ohio State University.

Luna-Krauletz, M. D., Juárez-Hernández, L. G., Clark-Tapia, R., Súcar-Súccar, S. T., & Alfonso-Corrado, C. (2021). Environmental Education for Sustainability in Higher Education Institutions: Design of an Instrument for Its Evaluation. *Sustainability*, *13*, 7129.

Luthra, A., & Dahiya, R. (2015). Effective leadership is all about communicating effectively: Connecting leadership and communication. *International Journal of Management & Business Studies*, *5*(3), 43-48.

Mabogunje, A. L. (1998). The Environmental Challenges in Sub Saharan Africa. *African Technology Forum*, *8*(1). <https://www.mit.edu>

Maccoby, M. (2004). *The productive narcissist: The promise and peril of visionary leadership*. New York, Broadway Books.

Mahdinezhad, M., Bin Suandi, T., Bin Silongi, A., & Omar, Z. (2013). Transformational, Transactional Leadership Styles and Job Performance of Academic Leaders. *International Education Studies*, *6*(11), 29-34.

Mahlangu, R. (2008). *The effective functioning of a School Governing Body: A case study in selected schools* (Masters dissertation). University of South Africa, Pretoria.

Malina, M. A., Nørreklit, H. S. O., & Selto, F. H. (2011). Lessons learned: advantages and disadvantages of mixed method research. *Qualitative research in Accounting & Management*, *8*(1), 59-71.

Mandela, N. (n.d). "Education is the most powerful weapon which you can use to change the world" <https://blog.usaid.gov/2013/04/education-the-most-powerful-weapon/>

Mandukwini, N. (2016). Challenges towards curriculum implementation in high schools in Mount Fletcher District, Eastern Cape (Masters dissertation). University of South Africa, Pretoria.

Mansfield Independent School District (MISD). (2019). Curriculum and Instruction. In the Texarkana Independent School District (ed.), *Curriculum Management Plan*. <https://www.txkisd.net>

- Marcinkowski, T. (2010). *Major features of environmental literacy*. Department of Science and Mathematics Education, Florida Institute of Technology.
- Maringa, M. D. (2016). Principal's Experiences in Managing Curriculum in Secondary Schools in Mopani District (Masters dissertation). University of Pretoria, South Africa.
- Marsh, C. J. (2009). *Key concepts for understanding curriculum*. New York, Routledge.
- Martinez, M. (2010). *Cognitive Development through the Life Span: Learning and Cognition: The Design of the Mind*. Pearson, 1-13.
- Mathee, A. (2011). Environment and Health in South Africa: Gains, Losses, and Opportunities. *Journal of Public Health Policy*, 32(1), 37-43.
- Mathenjwa, J. S. (2014). *The implementation of environmental education in the Ubombo circuit schools* (Masters dissertation). University of Zululand, Ongoye.
- Matshe, P. F. A. (2001). Teachers' Views on Implementation of Environmental Education in Senior Phase around Itsoseng (Masters dissertation). Rand Afrikaans University.
- Matthew N. O. S., Tolulope, J. A., Abayomi, A., & Sarhan M. M. (2020). Environmental Studies: An Introduction. *International Journal of Scientific Advances*, 1(3), 153-158.
- Maurya, P. K., Ali, S. A., Ahmad, A., & Zhou, Q. (2020). An Introduction to Environmental Degradation: causes, consequence and mitigation. In: *Environmental Degradation: Causes and Remediation Strategies*. <https://www.doi:10.26832/9esa-2020-cdcrs-01>
- Mavuso, M. P. (2016). Scratching the outside? Perspectives of subject advisors on their practices in supporting teaching and learning in South African schools. *International Journal of Science*, 12(3), 184-191.
- Mawela, A. S. (2016). Barriers to Managing Environmental Education Projects in Alexandra Township Primary and Secondary Schools (Doctoral dissertation). University of South Africa, South Africa.
- Maxwell, J. A. (2012). *Qualitative Research Design: An Interactive Approach*. London, Sage Publications.

Mayrowetz, D., Murphy, J., Seashore-Louis, K., & Smylie, M. A. (2007). Distributed leadership as work redesign: Retrofitting the job characteristics model. *Leadership and Policy in Schools, 6*, 69-101.

Mbanjwa, H. T. (2014). The role of subject advisors in strengthening teacher instructional leadership practices: A case study of one education district office in KwaZulu-Natal. https://researchspace.ukzn.ac.za/bitstream/handle/10413/11569/Mbanjwa_Hamilton_Thulani_2014.pdf?sequence=1&isAllowed=y

McBeath C. (1997). From the bottom up: A curriculum dissemination strategy in practice. *Curriculum Perspectives, 17*(2), 9-20.

McCrea, J. E. (2006). The Roots of Environmental Education: How the Past Supports the Future. *Environmental Education and Training Partnership*. University of Wisconsin-Stevens Point

McGivney, E., & Winthrop, R. (2016). *Rethinking Education in a changing world*. https://www.ssir.org/articles/entry/rethinking_education_in_a_changing_world

McLeod, S. A. (2018). *Lev Vygotsky: Simply Psychology*. <https://www.simplypsychology.org/lev-vygotsky.html>

McMahon, M. (1997). *Social Constructivism and the World Wide Web- A Paradigm for Learning*. Paper presented at the ASCILITE conference. Perth, Australia.

McMillan, J., & Schumacher, S. (2010). *Research in Education: Evidence-Based Inquiry*. University of Commonwealth, Pearson.

McRaven, W. H. (n.d). “You cannot change the world alone- you need some help- and to truly get from your starting point to your destination takes friends, colleagues, the good will of strangers and a strong coxswain to guide them” https://www.brainyquote.com/quotes/william_h_mcraven_638587

Mehta, S., & Maheshwari, G. C. (2013). Consequence of toxic leadership on employee job satisfaction and organizational commitment. *Journal of Contemporary Management Research, 8*(2), 1-23.

Meindl, J. (1995). The Romance of Leadership as a Follower Centric Theory: a Social Constructionist Approach. *Leadership Quarterly*, 6, 329–341.

Meindl, J. R., Ehrlich, S. B., & Dukerich, J. M. (1985). The Romance of Leadership. *Administrative Science Quarterly*, 30, 78–102.

Mensah, J. (2019). Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. *Cogent Social Sciences*, 5, 1653531. <https://www.doi.org/10.1080/23311886.2019.1653531>

Meraku, A. (2017). Role of leadership in organisational effectiveness. *Journal of Economics, Business and Management*, 5(11), 336-340.

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation*. San Francisco, CA, Jossey-Bass.

Mildner, V. (2019). *The SAGE Encyclopedia of Human Communication Sciences and Disorders: Experimental Research*. Thousand Oaks, Sage Publications, Inc

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded source book*. Newbury Park, CA, Sage.

Miller, B. (2020). 15 Advantages and Disadvantages of Quantitative Research. <https://www.greengarageblog.org/15advantages-and-disadvantages-of-quantitative-research>

Minister of Basic Education v Basic Education for All (20793/2014) [2015] ZASCA 198; [2016] 1 All SA 369 (SCA); 2016 (4) SA 63 (SCA) (2 December 2015).

Mishra, P. K. (2018). *Environmental education as driver for sustainable development goals*. <https://www.researchgate.net/publication/322835204>

Mishra, R. K. (2013). Vygotskian Perspective of Teaching-Learning. *Innovation: International Journal of Applied Research*, 1(1), 1-8.

Mitchell, O. (2015). Experimental research design. In book: *The Encyclopedia of Crime & Punishment*. <https://doi.org/10.1002/9781118519639.wbecpx113>

Mithal, S., & Dhavle, A. (2022). Role of leaders in transformations. <https://www.thoughtworks.com/insights/blog/leadership/leaders-transformation>

- Mlambo, S., & Ezeudji, I. O. (2020). South Africa's KwaZulu-Natal Tourism Destination Brand Essence and Competitiveness: T'URISTS Perspectives. *Geojournal of Tourism and Geosites*, 32(4), 1195-1201.
- Mngomezulu, N. M. (2015). *Strategies of monitoring teaching and learning: A school management team perspective* (Masters dissertation). University of KwaZulu Natal, South Africa.
- Mohajan, H. (2017). *Research Methodology*. Munich Personal RePEc Archive (MPRA). <https://mpra.ub.uni-muenchen.de/83457/>
- Mohanasundaram, K. (2018). Curriculum design and development. *Journal of applied and advanced research*, 3(1), 4-6.
- Mokhele, M. L. (2007). Opportunities to Learn Environmental Education: A Case Study of Mpumalanga Province (Masters dissertation). University of Pretoria, South Africa)
- Mokhele, M. L. (2011). Integrated Environmental Teaching in South Africa: An Impossible Dream? *Perspectives in Education*, 29(4), 78–86
- Mokua, B. (2010). *An evaluation of the curriculum development role of teachers as key agents in curriculum change* (Masters dissertation). North-West University, Potchefstroom.
- Money, V. (2017). Effectiveness of Transformational Leadership Style in Secondary Schools in Nigeria. *Journal of Education and Practice*, 8(9), 135-140.
- Moonlenaar, N. M., Daly, A. J., & Sleengers, P. J. (2010). Occupy the Principal Position: Examining Relationships between Transformational Leadership, Social Network Position, and Schools' Innovative Climate. *Education Administration Quarterly*, 46(5), 623-670.
- Moorosi, P., & Bantwini, B. D. (2016). School District Leadership Styles and School Improvement: Evidence from Selected School Principals in the Eastern Cape Province. *South African Journal of Education*, 36(4), 1-9.
- Morgan, D. L. (2014). Pragmatism as a Paradigm for Social Research. *Qualitative Inquiry*, 20(8), 1045-1053.

- Mosidi, S. M. (1997). *Infusion Confusion? Environmental Education in the New Outcomes Based education in South Africa*, Pretoria: Pretoria Technikon.
- Mosidi, S. M. (1999). *Environmental Education in Curriculum 2005: A Case Study in the Northern Cape* (Masters dissertation). Rand Afrikaans University, Johannesburg.
- Motshegoa, M. E. (2006). *The Policy and Practice of Environmental Education in South African Schools* (Masters mini dissertation). University of Pretoria, South Africa.
- Mthembu, T. T. (2014). *The role of circuit managers in enhancing instructional leadership practices in schools: A phenomenological approach* (Masters dissertation). University of KwaZulu-Natal, South Africa.
- Mullins, L. J. (2007). *Management and Organisational Behaviour*. Harlow, Financial Times Prentice Hall.
- Mupa, P., & Chinooneka, T. I. (2015). Factors Contributing to Ineffective Teaching and Learning in Primary Schools: Why Are Schools in Decadence? *Journal of Education and Practice*, 6, 125-132.
- Murphy, J. T. (2005). *Connecting Teacher Leadership and School Improvement*. Thousand Oaks, CA, Corwin Press.
- Muskin, J. A. (2015). Student Learning Assessment and the Curriculum: Issues and Implications. *Educational Theory*, 58(1), 1-5.
- Mustam, B., & Daniel, E. S. (2016). Informal and formal environmental education infusion: actions of Malaysian teachers and parents among students in a polluted area. *Malaysian Online Journal Education Sciences*, 4(1), 9–20.
- Mwenda, B. (2017). Learning for sustainable development: Integrating environmental education in the curriculum of ordinary schools in Tanzania. *Journal of sustainability education*, 12(1), 1-15.
- Nanjundeswaras, T. S., & Swamy, D. R. (2014). Leadership styles: Review Paper. *Advances In Management*, 7(2), 57–63.

- Nassaji, H. (2015). Qualitative and descriptive research: Data type versus data analysis. *Language Teaching Research*, 19(2), 129-132.
- Nawab, A., & Asad, M. M. (2020). Leadership practices of school principal through a distributed leadership lens: a case study of secondary school in urban Pakistan. *International Journal of Public Leadership*, 16(4), 411-422.
- Nayar, A. (2013). Importance of Education for Sustainable Development. <http://wwf.panda.org/?210950/importance-for-sustainable-development>
- Naziev, A. (2017). What is an education? In *Conference Proceedings*. The Future of Education, 436).
- Neale, P., Thapa, S., & Boyce, C. (2006). Preparing a Case Study: A Guide for Designing and Conducting a Case Study for Evaluation Input. *Pathfinder International Tool Series*, 1, 1-6.
- Nevin, E. (2008). Education and Sustainable Development', in Policy & Practice. A *Development Education Review*. Jenna Coriddi.
- Ngulube, P. (2015). *Qualitative data analysis and interpretation: system search for meaning* (Chapter 8). <https://www.10.13140/RG.2.1.1375.7608.28>
- Nhlanzi, N. C. (2018). *Exploring Principals' Strategies in the Management of Curriculum and Assessment Policy Statement (CAPS) in Further Education and Training (FET) Phase, at Mahlabathini Circuit Secondary Schools* (Masters dissertation). University of KwaZulu Natal, South Africa.
- Nielson, M., & Gahlwat, V. (2012). *Bridging the Gap? Leadership Theories Applied in Distance Settings* (Masters dissertation). Blekinge Tekniska Hogskola.
- Nikezic, S., Puric, S., & Puric, J. (2012). Transactional and Transformational Leadership: Development through Changes. *International Journal of Quality Research*, 6(3), 285-296.
- Nkem, B. (2018). *Teacher Perspective of Distributed Leadership during Disruptive Change. The Case of a University in Cameroon* (Doctoral dissertation). North-eastern University.
- North American Association for Environmental Education (NAAEE). (2015). Building a Stronger and More Inclusive Movement: 44th Annual Conference. San Diego.

Northouse, P. G. (2013). *Leadership: Theory and Practice*. Thousand Oaks, CA, Sage Publications.

D O'Gorman, K., & MacIntosh, R. (2015). *Research methods for business and management: A guide to writing your dissertation*. Goodfellow Publishers Ltd.

O'leary, Z. (2014). Primary data: Surveys, interviews and observation. *The essential guide to doing your research project*, 201-216.

Odumeru, J. A., & Ogbonna, I. G. (2013). Transformational vs. transactional leadership theories: Evidence in literature. *International review of management and business research*, 2(2), 355.

Oduro, G. K. (2004, September). Distributed leadership in schools: What English headteachers say about the pull and push factors. In *British Educational Research Association Annual Conference* (pp. 16-18).

Organization of Economic Cooperation and Development. (2008). *Improving school leadership*. Volume 1: Policy and Practice. <https://www.oecd.org/education/school/improving-school-leadership.pdf>

Ogalo, E. A. (2013). *Influence of Principal Leadership Style on Students Achievement in Kenya Certificate of Secondary Education in Awendo District, Kenya* (Masters dissertation). University of Nairobi, Nairobi, Kenya.

Ogawa, R. T., & Scribner, S. P. (2002). Leadership: Spanning the Technical and Institutional Dimensions of Organizations. *Journal of Educational Administration*, 40(6), 576-88.

Ogunyinka, E. K., & Adedoyin, R. C. (2013). Leadership Styles and Work Effectiveness of School Principals in Ekiti State: Case Study of Ado-Ekiti Local Government Area. *Developing Country Studies*, 3(3), 64-73.

Okinyi, N. P., Kwaba, J. G., & Nyabuto, N. N. (2015). The Role of Leaders in Transforming Learners and Learning in the Higher Learning Institutions in Kenya. *Journal of Education and Practice*, 6(25), 105-116.

- Okoth, U. A. (2018). Transformational Leadership Practices in Curriculum Implementation (Environmental Education) in Secondary Schools in Siaya County, Kenya. *European Scientific Journal*, 14(10), 320-331.
- Oosthoek, J., & Gills, B. K. (2007). *The Globalization of Environmental Crisis*. Routledge, United States of America.
- Osborn, R. N., & Hunt, J. G. (2007). Leadership and the Choice of Order: Complexity and Hierarchical Perspectives near the Edge of Chaos. *Leadership Quarterly*, 18, 319–340.
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533-544.
- Palmer, J. A. (1998). *Environmental Education of the 21st century: Theory, practice, progress and promise*. London, Routledge.
- Panday, S. (2002). The relationship between environmental education and science education in the South African context. University of South Africa, Pretoria. <http://www.hdl.handle.net/10500/15734>
- Paraskeva-Hadjichambi, D., Goldman, D., Hadjichambis, A., Parra, G., Lapin, K., Knippels, M., & Dam, F. (2020). Educating for Environmental Citizenship in Non-formal Frameworks for Secondary Level Youth. In: *et al.* Conceptualizing Environmental Citizenship for 21st Century Education. *Environmental Discourses in Science Education*, 4. Springer, Cham. https://doi.org/10.1007/978-3-030-20249-1_14
- Parker, G. (2015). Distributed Leadership in English Schools in 2014. *Journal of Management in Education*, 29(3), 132-138.
- Pas, E. T., Cash, A. H., O'Brennan, L., Debnam, K. J., & Bradshaw, C. P. (2015). Profiles of classroom behaviour in high schools: Associations with teacher behaviour management strategies and classroom composition. *Journal of School Psychology*, 53(2), 137-148.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Newbury Park, Sage publications.

- Patton, M. Q. (2012). *Qualitative research and evaluation methods: Integrating theory and practice*. Thousand Oaks, Sage publication.
- Pea, R. D. (1993). Practices of Distributed Intelligence and Designs for Education. In Salomon, G. *Distributed Cognition: Psychological and Educational Considerations*. New York, Cambridge University Press, 47–87.
- Peden, M. (2006). Review of Environmental Education: Some South Africa Perspective. *Journal of Education*, 39, 170-174.
- Peden, M. (2009). *Review of Environmental Education: Some South African Perspectives*. University of Pretoria, Pretoria.
- Peersman, G. (2014). Overview: Data Collection and Analysis Methods in Impact Evaluation. *Methodological Briefs Impact Evaluation*, 10, 1-16.
- Perera, S. (2018). *Research Paradigms*. Workshop on Research Methodology. University of Colombo.
- Permanasari, G. H., Suherman, S., & Budiati, L. (2021). The Implementation of Environmental Education to Achieve Sustainable Development: Literature Review. In *E3S Web of Conferences 317*, 01069. <https://www.doi.org/10.1051/e3sconf/202131701069>
- Phelan, S. (2011). Case Study Research: Design and Methods. *Evaluation and Research in Education*, 24(3), 221-222.
- Phillips, T. (2022). *Environmental education is in the syllabus but teaching it is a battle*. <https://www.mg.co.za/education/2022-01-21-environmental-education-is-in-the-syllabus-but-teaching-it-is-a-battle/>- The Mail & Guardian (mg.co.za)
- Picasso, P. (n.d). *Our goals only can be reached through a vehicle of a plan, in which we must fervently believe, and upon which we must vigorously act. There is no other route to success* https://www.brainyquote.com/quotes/pablo_picasso_120939
- Potter, J., & Hepburn, A. (2005). Qualitative interviews in psychology: problems and possibilities. *Qualitative Research in Psychology*, 2, 281-307.

Powers, D. E., & Powers, A. (2015). The Incremental Contribution of TOEIC @ Listening, Reading, Speaking and Writing Tests to Predicting Performance on Real-life English Language Tasks. *Language Testing*, 32(2), 151-167.

Praveena, D., & Geetha, S. (2022). The impact of organizational goals on organization behaviour. *International Journal for Innovative Engineering and Management Research*, 11(1), 145-149.

Prawat, R. S., & Floden, R. E. (1994). Philosophical Perspectives on Constructivist Views of Learning. *Educational Psychologist*, 29(1), 37-48.

Pretorius, F. (1998). *Managing the change to an outcomes-based approach, in Outcomes Based education in South Africa*. Johannesburg, Hodder & Stoughton.

Price-Dowd, C. F. J. (2020). Your leadership style: why understanding yourself matters. *Business Management Journal Leader*, 4, 165-167.

Promethean, (2015). *School strategy: How to meet goals and challenges*. <https://www.resourced.prometheanworld.com/school-strategy/>

Punch, K. F. (2005). *Introduction to social research. Qualitative and quantitative approaches*. Sage Publications.

Qiu, H., Zhang, Y., Hou, G., & Wang, Z. (2018). The integrative effects of leading by example and follower traits in public goods game: A multilevel study. *Frontiers in psychology*, 9, 1687.

Quan-Baffour, K. P. (2006). *The role of school governing bodies in improving school performance in Taung rural areas* (Doctoral dissertation) University of South Africa, Pretoria.

Radeiski, J. (2009). *The Implementation of Environmental Education in elementary school: A comparative study between Sweden and Germany* (Masters dissertation). Blekinge Institute of Technology, Sweden.

Rahman, M. S. (2016). The Advantages and Disadvantages of Using Qualitative and Approaches and Methods in Language “Testing and Assessment” Research: A Literature Review. *Journal of Education and Learning*, 6(1), 102-112.

Rahman, N. A., Halim, L., Ahmad, A. R., & Soh, T. M. T. (2018). Challenges of Environmental Education: Inculcating Behavioural Changes among Indigenous Students. *Creative Education*, 9, 43-55.

Rasebotsa, D. (2017). *How curriculum advisers and school management teams communicate curriculum changes in schools* (Masters dissertation). University of Pretoria, South Africa.

Raymond, C. N. (n.d.). *Education is learning the extent of one's ignorance*. <https://www.goodreads.com/quotes/481545-education-is-learning-the-extent-of-one-s-own-ignorance>

Reddy, C. (2017). Environmental education in teacher education: A viewpoint exploring options in South Africa. *Southern African Journal of Environmental Education*, 33(1), 117-126.

Reddy, C. (2021). Environmental Education, Social Justice and Teacher Education: Enabling Meaningful Environmental Learning in Local Contexts. *South African Journal of Higher Education*, 35(1), 161-77.

Regnault, A., Willgoss, T., & Barbic, S. (2018). International Society for Quality of Life Research (ISOQOL) Mixed Methods Special Interest Group (SIG). Towards the use of mixed methods inquiry as best practice in health outcomes research. *Journal Patient Repository Outcomes*, 2(1), 19.

Rehman, A. A., & Alharthi, K. (2016). An Introduction to Research Paradigms. *International Journal of Educational Investigations*, 3(8), 51-59.

Reilly, S. (2008). Environmental Education's Role in Sustainable Development: Three Case Studies from India, South Africa & the United States NR 523. *International Resource Management* May 2, 2008. <https://www3.uwsp.edu/forestry/StuJournals/Documents/IRM/Reilly.pdf>

Resnik, D. B. (2018). Examining the Social Benefits Principle in Research with Human Participants. *Health Care Analysis*, 26(1), 66-80.

Revez, J., & Borges, L. C. (2018). *Pragmatic Paradigm in Information Science Research: A Literature Review*. <https://www.researchgate.net/publication/325403026>

Reza, M. H. (2019). Components of Transformational Leadership Behaviour. *EPRA International Journal of Multidisciplinary Research*, 5(3), 119-124.

Rhee, Y. (2004). *The EPO Chain in Relationship Management: A Case Study of Government Organization* (Doctoral dissertation). University of Maryland, College Park.

Richards, T. J., & Richards, L. (1994). Using Computers in Qualitative Research. In N. Denzin, & Y. Lincoln (Eds.), *Handbook of Qualitative Research* (pp, 445-462). London, Sage Publications.

Richardson, A. J. (2012). Paradigms, Theory and Management Accounting Practice: A Comment on Parker (Forthcoming) Qualitative Management Accounting Research: Assessing Deliverables and Relevance. *Critical Perspectives on Accounting*, 23(1), 83-88.

Richardson, M., & McEwan, K. (2018). 30 Days Wild and the relationships between engagement with nature's beauty, nature connectedness and well-being. *Frontiers in Psychology*, 9, 1500. <https://doi.org/10.3389/fpsyg.2018.01500>

Riege, A. M. (2003). Validity and reliability tests in case study research: A literature review with 'hands-on' applications From each research phase. *Qualitative Market Research: An International Journal*, 6(2), 75-86.

Robinson, O. C. (2014). Sampling in Interview-Based Qualitative Research: A Theoretical and Practical Guide. *Qualitative research in psychology*, 11(1), 25-41.

Roman, A., & Rusu, V. (2016). The Impact of the Economic Environment on Entrepreneurship: Evidence from European Countries. *Annals of the University of Oradea, Economic Science Series*, 25(1), 494-502.

Rosenbach, W. E., Sashkin, M., & Harburg, F. (1996). *The leadership profile - On becoming a better leader*. Seabrook, MD, Ducochon Press.

Rosenberg, E., Nsubuga, Y., & Burt, J. (2009). *Quality and Relevance in South African Schooling: Implications for Human Capital Development in the Environmental Sector*. <https://www.greenmatterza.com>

- Ross, J. A., & Gray, P. (2006). Transformational Leadership and Teacher Commitment to Organizational Values: The mediating effects of collective teacher efficacy. *School Effectiveness and School Improvement*, 17, 179-199.
- Rouse, A. T. (2015). *Surveying the Growth and Development of Spoken Language Interpreting in Hawai'i*. University of Hawai'i, Manoa.
- Rowley, J. (2002). Using Case Studies in Research. *Management Research News*, 25(1), 16-27.
- Ryba, K. (2021). *Your Guide to Developing a Performance Management Cycle*. <https://www.quantumworkplace.com/future-of-work/performance-management-cycle>
- Saadi, A. M., Hussain, A., Bhutta, R. N., Perveen, N., Kazmi, U., & Ahmad, N. (2009). Democratic and distributed leadership for school improvement: Case studies from Pakistan. *The International Journal of Learning*, 16(2), 521-532.
- Salle, M. W., & Flood, J. T. (2012). Using Qualitative Research to Bridge Research, Policy and Practice. *Theory into Practice*, 51(2), 137-144.
- Sauve, L. (1996). Environmental Education and Sustainable Development: A further Appraisal. *Canadian Journal of Environmental Education*, 1(1), 7-34.
- Schrage, J. (2015). *Mainstreaming Education for Sustainable Development in Botswana: A Case Study Research of Teacher Education Institutions* (Masters dissertation). Uppsala University.
- Schweitzer, K. (2019). Curriculum Design: Definition, Purpose and Types. In *ThoughtCo*. <https://www.thoughtco.com/curriculum-design-definition-4154176>
- Scott, D., & Usher, R. (2004). *Researching Education: Data, Methods and Theory in Educational Enquiry*. New York, Continuum.
- Sedmak, J. (2021). *What is Stakeholder Engagement, and Why is it Important for Strategic Planning?* <https://www.smestrategy.met/b;og/stakeholder-engagement-management-for-strategic-planning>

- Shabalala, N. P. (2019). *Perceptions of Teachers and Learners towards the Integration of Environmental Education in the Classroom* (Masters dissertation). University of South Africa, Pretoria.
- Shah, A., & Jehangir, S. (2006). Teaching for quality education in environmental education: Challenges and possibilities. *Quality in education: Teaching and leadership in challenging times*, 2, 565-579.
- Shah, S. R., & Al-Bargi, A. (2013). Research Paradigms: Researcher's Worldviews, Theoretical Frameworks and Study Designs. *Arab World English Journal*, 4(4), 252-264.
- Shamir, B. (1995). Social Distance and Charisma: Theoretical Notes and an Exploratory Study. *Leadership Quarterly*, 6(1), 19-47.
- Sharma, I. B., & Singh, K. (2013). A Study on the Democratic Style of Leadership. *International Journal of Management & Information Technology*, 3(2), 54-57. <https://doi.org/10.24297/ijmit.v3i2.1367>
- Sharma, M. (2008). *Open ire Administration- From Technologies to Solutions*. Bermingham, Packt Publishers
- Sharma, M. K., & Jain, S. (2013). Leadership Management: Principles, Models and Theories. *Global Journal of Management and Business Studies*, 3(3), 309-318.
- Shava, G. N., & Tlou, F.N. (2018). Distributed leadership in education, contemporary issues in educational leadership. *African Educational Research Journal*, 6(4), 279-287.
- Shenton, A. K. (2004). Strategies for Ensuring Trustworthiness in Qualitative Research Projects. *Education for Information*, 22, 63-75.
- Shunk, D. (2000). *Learning Theories: An Educational Perspective*. New Jersey, Prentice-Hall, Inc.
- Shutaleva, A., Nikonova, Z., Savchenko, I., & Martyushev, N. (2020). Environmental education for sustainable development in Russia. *Sustainability (Switzerland)*, 12(18). <https://www.doi.org/10.3390/su12187742>

- Sibanda, L. (2017). Understanding Distributed Leadership in South African Schools: Challenges and Prospects. *Issues in Education Research*, 27(3), 567-581.
- Sileyew, K. J. (2019). *Research Design and Methodology* (Book chapter). Ethiopia, Cyberspace.
- Silverman, D. (2010). *Qualitative Research*. London, Sage Publications.
- Skidmore, S. (2008). Experimental Design and Some Threats to Experimental Validity: A Primer. *Online Submission*.
- Smith, B. (2015). *South Africa: Environmental Issues, Policies and Clean Technology*. <https://www.azocleantech.com/article.aspx?ArticleID=561>
- Sobh, R., & Perry, C. (2006). Research Design and Data Analysis in Realism Research. *European Journal of Marketing*, 40(11), 1194-1209.
- Solly, B. (2018). Distributed leadership. *Secondary Education*, 6(501), 1-6. <https://www.doi:10.12968/sece.2018.4.6>
- Sorqvist, P., & Langeborg, L. (2019). Why People Harm the Environment Although they Try to Treat it Well: An Evolutionary-Cognitive Perspective on Climate Compensation. *Frontiers in Psychology*, 10, 348.
- Spillane, J. P., Halverson, R., & Diamond, J. (2004). Towards a Theory of School Leadership Practice: Implication of a Distributed Perspective. *Journal of Curriculum Studies*, 36(1), 3-34.
- Spillane, J., Diamond, J., Sherer, J., & Colderen, A. (2004). Distributing Leadership. Chapter 3, In: Coles, M and Southworth, G. *Developing Leadership: Creating the Schools for Tomorrow*. New York, OU Press.
- Spillane, J. P. (2005). Distributed leadership. *The Educational Forum*, 69(2), 143-150.
- Spillane, J. P. (2006). *Distributed Leadership*. San Francisco, CA, John Wiley & Sons.
- Spillane, J. P., & Healey, K. (2010). Conceptualising School Leadership and Management from a Distributed Perspective: An Exploration of Some Study Operations and Measures. *Elementary School Journal*, 11(12), 253-281.

Spillane, J. P., Camburn, E. M., & Lewis, G. (2006). Taking a Distributed Perspective in Studying School Leadership and Management: Epistemological and Methodological Trade-offs. Paper presented at the annual meeting of the *American Educational Research Association*, San Francisco, CA. <https://www.sesp.northwestern.edu/dls/publications/papers>

Spillane, J. P., Diamond, J. B., & Jita, L. (2003). Leading Instructions: The Distribution of Leadership for Instruction. *Journal of Curriculum Studies*, 35(5), 533-543.

Spillane, J. P., Halverson, R., & Diamond, J. (2001). *Towards a Theory of Leadership Practice: A Distributed Perspective*, North-western University, Institute for Policy Research, Evanston, IL.

Spillane, J. P., Hunt, B., & Healey, K. (2009). Managing and Leading Elementary Schools: Attending to the Formal and Informal Organisation. *Journal of the Commonwealth Council for Educational Administration & Management*, 37(1), 5-28.

Staff, K. (2019). Transformational Leadership: Strengths and Weaknesses. <https://www.konsyse.com>

Stapp, W. B. (1969). The Concept of Environmental Education. *Environmental Education*, 1(1), 30-31. <https://www.doi:10.1080/00139254.1969.10801479>

Starman, A. B. (2013). The Case Study as a Type of Qualitative Research. *Journal of Contemporary Educational Studies*, 1, 28-43.

Stebbins, R. A. (2001). *Exploratory research in the social sciences*. Sage Publications, Inc. <https://dx.doi.org/10.4135/9781412984249>

Stein, A. A. (2018). Realism/Neorealism. *The International Encyclopedia of the Social and Behavioural Sciences*. New York, Elsevier. <https://ssrn.com/abstract=3170653>

Stenhouse, L. (2012). A process model of curriculum. In Y Reed, J Gultig & M Adendorff (eds). *Curriculum: organizing knowledge for the classroom* (3rd ed). Cape Town, Oxford University Press.

Stockholm. (1972). *The Declaration of the United Nations Conference on the Human Environment*. <https://legal.un.org>

Strokes, E., Edge, A., & West, A. (2001). *Environmental Education in the Educational Systems of the European Union*. Final Report. London School of Economics and Political Sciences, Centre for Educational Research.

Strydom, H. (2014). An evaluation of the purposes of research in social work. *Social Work/Maatskaplike Werk, 49*.

Strydom, H., & Venter, L. (2002) Sampling and Sampling Methods. In: De Vos, A.S., Ed., *Research at Grass Roots: For the Social Sciences and Human Service Profession*. Van Schaik, Pretoria.

Subramoney, P. (2016). *The role of the School Management Team in improving the matric results in a National Strategy for Learner Attainment (NSLA) School* (Masters dissertation). University of KwaZulu Natal, South Africa.

Sudhakar J. (2017). Teaching Aids and resources Aids the best learning October 25, 2017. <https://www.linkedin.com/pulse/teaching-aids-resources-best-learning-ms-jemi-sudhakar/.7>

Sukma, E., Ramadhan, S., & Indriyani, V. (2020). Integration of environmental education in elementary schools. *Journal of Physics, Conference Series, 1481*(1), 012136.

Summers, J. K., & Vivian, D. N. (2018). Ecotherapy- A forgotten ecosystem service: A Review. *Frontiers in Psychology, 9*(1389), 1-13.

Sunasee, A., Bokhoree, C., & Patrizi, A. (2021). Students' empathy for the environment through Eco-Art Place-based education: A Review. *Ecologies, 2*, 214-247.

Supovitz, J. A., D'Auria, J., & Spillane, J. P. (2019). *Meaningful Sustainable School Improvement with Distributed Leadership*. Consortium for Policy Research in Education. University of Pennsylvania.

Surji, K. M. (2015). Understanding Leadership and Factors that Influence Leaders' Effectiveness. *European Journal of Business and Management, 7*, 154-167.

Swan, J. (1969). The Challenge of Environmental Education. *The Phi Delta Kappan, 51*(1), 26–28. <http://www.jstor.org/stable/20372507>

Swedberg, R. (2018). On the uses of exploratory research and exploratory studies in social science. *Canada: Connell University*.

Taherdoost, H. (2017). Determining sample size; how to calculate survey sample size. *International Journal of Economics and Management Systems*, 2, 1-4.

Takyi, H., Emmanuel, K. A., & Yussif, K. A. (2013). The level of stakeholder's participation in the district education strategic planning towards quality basic education: the case of salaga town council of Ghana. *International Journal of Humanities and Social Science*, 3(14), 95-102.

Tapia-Fonllem, C., Fraijo-Sing, B., & Corral-Verdugo, V., et al. (2020). School Environments and Elementary School Children's Well-Being in Northwestern Mexico. *Frontiers in psychology*, 11, 510.

Tatana, S. (2014). *The role of subject advisors in enhancing instructional leadership practices in schools: The case of one educational district in Kwazulu-Natal* (Doctoral dissertation). University of KwaZulu-Natal, South Africa.

Tbilisi Declaration. (1997). Intergovernmental Conference on Environmental Education. Tbilisi, USSR, 14–26 October.

Tefera, G. M. (2018). Components of Transformational Leadership. <https://www.atlascorps.org>

Tengi, M. L., Mansor, M., & Hashim, Z. (2017). A Review Theory of Transformation Leadership for School. *International Journal of Academic Research in Business and Social Sciences*, 7(3), 792-799.

Terrell, S. (2016). *Writing a Proposal for Your Dissertation Guidelines and Examples*. New York, Guilford Press.

Thangeda, A., Baratiseng, B., & Mompaty, T. (2016), Education for sustainability: quality education is a necessity in modern day: How far do the education institutions facilitates quality education? *Journal of Education and Practice*, 7(2), 9-17.

The Constitution of the Republic of South Africa. (1996). *South African Government*.
<https://www.justice.gov.za>

The National Research Council Committee. (2004). *Intentional Human Dosing Studies for EPA Regulatory Purposes: Scientific and Ethical Issues*. National Academies Press, Washington, United States.

Thomas, J. E. (2017). Scholarly Views on Theory: Its Nature, Practical Application, and Relation to World View in Business Research. *International Journal of Business and Management*, 12(9), 231-240.

Thompson, J. (2019). *Advantages and Disadvantages of Transformational Leadership*.
<https://www.smallbusiness.chron.com>

Thompson, S. B. (2011). Qualitative Research: Validity. *Journal of Administration and Governance*, 6(1), 77-82.

Thurmond, V. A. (2001). The Point of Triangulation. *Journal of Nursing Scholarship*, 33(3), 253-258.

Timperley, H. S. (2005). Distributed leadership: Developing Theory from Practice. *Journal of Curriculum Studies*, 37, 395-420.

Tlhagale, M. P. (2004). *Environmental Education as a Strategy towards Sustainable Living for Rural Communities* (Masters dissertation). University of Pretoria, Pretoria.

Tourish, D., & Pinnington, A. (2002). Transformational Leadership, Corporate Cultism, and the Spirituality Paradigm: an Unholy Trinity in the Workplace. *Human Relations*, 55(2), 147-172.

Towler, A. J. (2003). Effects of charismatic influence training on attitudes, behaviour, and performance. *Personnel Psychology*, 56, 363-381.

Towler, A. J. (2019). *The Qualities of Transformational Leaders and What distinguishes them from Transactional Leaders*. <https://www.ckju.net>

Townsend, A., Cox, S. M., & Li, L. C. (2010). Qualitative Research Ethics: Enhancing Evidence-Based Practice in Physical Therapy. *Physical Therapy*, 90(4), 615-628.

Trammel, J. M. (2016). *The Relationship between Distributed Leadership and Teacher Affective Commitment in Public and Private Schools* (Doctoral dissertation). Carson-Newman University.

Triegaardt, P. K. (2013). *The Role of Distributive Leadership as Strategy to Ensure Effective Schools: A Comparative Case Study within Selected South Africa Schools* (Doctoral dissertation). University of South Africa, Pretoria.

Tripiyono, A., Muda, I., & Tripiyono, E. (2017). The effect of the political environment and the economic environment on the welfare of community. *Advances in Economics, Business and Management Research*, 46(1), 49-53.

Tucker, B. A., & Russell, R. F. (2004). The influence of the transformational leader. *Journal Leadership Organisational Studies*, 10, 103–111.

Turner, P. (2020). *Measuring and Developing Transformational Leadership*. <https://www.fire-magazine.com>

Tyler, R. W. (2013). Basic principles of curriculum and instruction. In *Curriculum Studies Reader E2* (pp. 60-68). Routledge.

United Nations. (2018). *Towards a Global Pact for the Environment*, [resolution 72/277](https://www.unep.org/events/conference/towards-global-pact-environment). <https://www.unep.org/events/conference/towards-global-pact-environment>

United Nations Conference on Environment and Development (1992). *Agenda 21*. <https://www.unesco.org/education/esd/English/chapter/chapter.shtml>

Underwood, J. (2019). Under the Law: The legal balancing act over public school curriculum. *Phi Delta Kappan*, 100(6), 74-75. <https://www.doi:10.1177/0031721719834035>

United Nations Environment Assembly. (2019). *UN 2030 Agenda for Sustainable Development*. <https://www.unep.org/environmentassembly/>

United Nations Environment Assembly. (2020). *Act #ForNature Virtual Preparatory Forum for UNEA-5*. <https://www.genevaenvironmentnetwork.org/events>

United Nations Educational, Scientific and Cultural Organization. (2005). *Education for all: The quality imperative*. Paris, Grapho-print.

United Nations Education Scientific and Cultural Organisations. (1972). The Report of the United Nations Conference on the Human Environment, Stockholm, 5-16 June 1972, chapter 6, section 5.

United Nations Education Scientific and Cultural Organisations. (2020). *Education for Sustainable Development—A Roadmap, ESD for 2030*. Unesco Publishing, Paris, France.

United Nations Education Scientific and Cultural Organisations. (2021). *Sub-Education Policy Review Report: Education for Sustainable Development (ESD)*. https://en.unesco.org/sites/default/files/education_for_sustainable_development_final_-_january_2021_1.pdf

United Nations Education Scientific and Cultural Organisations in co-operation with United Nations Environment Programme. (1976). The Belgrade Charter. *Connect*, 1(1), 1-8.

United Nations Education Scientific and Cultural Organisations in co-operation with United Nations Environment Programme. (1978). The Tbilisi Declaration. *Connect*, 3(1), 1-8.

United Nations Education Scientific and Cultural Organisations in co-operation with United Nations Environment Programme. (1987). International Congress on Environmental Education and Training, held at the International Centre in Moscow, USSR, during 17–21 August 1987

United Nations Education Scientific and Cultural Organisations in co-operation with United Nations Environment Programme. (1987). *International strategy for action in the field of Environmental Education and training for the 1990s*. <http://unesdoc.unesco.org/images/008/00805eo.pdf>

United Nations Conference on Environment and Development Rio de Janeiro, Brazil. (1993). *Agenda 21: Programme of Action for Sustainable Development ; Rio Declaration on Environment and Development ; Statement of Forest Principles: The Final Text of Agreements Negotiated by Governments at the United Nations Conference on Environment and Development (UNCED), 3-14 June 1992, Rio De Janeiro, Brazil*. New York, United Nations Dept. of Public Information.

United Nations Education Scientific and Cultural Organisations in co-operation with United Nations Environment Programme. (1997). *Memory of the World*. <https://www.unesco.org>

United Nations Education Scientific and Cultural Organisations in co-operation with United Nations Environment Programme. (2002). *Manual of the General Conference*. UNESCO Digital Library. <https://www.unesco.org>

United Nations Education Scientific and Cultural Organisations. (1978). *Teaching Human Rights: Education's Fourth "R"*. Washington, Paris.

United Nations Education Scientific and Cultural Organisations. (1978). *Declaration on Fundamental Principles Concerning the Contribution of the Mass Media to Strengthening Peace and International Understanding to the Promotion of Human Rights and to Countering Racism, apartheid and Incitement to War*. <https://portal.unesco.org>

United Nations Education Scientific and Cultural Organisations. (1985). *Convention Concerning the Protection of the World Cultural and Natural Heritage*. UNESCO Headquarters, Paris.

United Nations Education Scientific and Cultural Organisations. (2017). *Transforming Our World: The 2030 Agenda for Sustainable Development*. UNESCO Digital library. <https://www.UNESCO.ORG>

United Nations Environment Programme. (2007). *UNEP 2007 Annual Report: UN Environment Document*. <https://www.unep.org/publications>

United Nations Environment Strategy. (2022). *The United Nations Environment Programme Strategy for tackling climate change, biodiversity and nature loss, and pollution and waste from 2022-2025*. <https://www.wedocs.unep.org/bitstream/handle/20.500.11822/35875/k2100501-e.pdf>

United Nations. (1992). *Agenda 21*. United Nations, New York.

United Nations. (1992). *United Nations Conference on Environment and Development: Agenda 21*. Rio de Janeiro, Brazil.

United Nations. (2002). *Report of the world summit on sustainable development (A/CONF.199/20)*. United Nations, New York.

United Nations. (2015). *Transforming our world: the 2030 Agenda for sustainable development*. Resolution adopted by the general assembly on 25 September 2015 (A/RES/70/1). United Nations, New York.

Vaismoradi, M., & Snelgrove, S. (2019). Theme in qualitative content analysis and thematic analysis. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, 20(3), 1-14.

Valavanidis, A. (2019). Current environmental issues and emerging global challenges in the 21st century for environmental protection and sustainable development. *Scientific Reviews*, 1, 1-52.

van Eeden, E. S. (2010). Curriculum transformations in History: Driven by political trends or as a result of empirical outcomes and educational progress? A debate with South Africa as example. *Yearbook Annals, International Society for History Didactics*, 25-52.

van Oord, L. (2013). Towards transformative leadership in education. *International Journal of Leadership in Education*, 16, 419-434.

Verma, G., & Dhull, P. (2017). Environmental Education as a Subject in Schools. *International Journal of Advanced Research*, 5(8), 1547-1552.

Vidal, G. G., Campdesuner, R. P., Rodriguez, A. S., & Vivar, R. M. (2017). Contingency Theory to Study Leadership Styles of Small Businesses Owner-managers at Santo Domingo, Ecuador. *International Journal of Engineering Business Management*, 9, 1-11.

Vince, R. (2014). What do HRD scholars and practitioners need to know about power, emotion, and HRD? *Human Resources Development Quarterly*, 25, 409–420.

Da Vinci. L. (n.d). Iron rusts from disuse, stagnant water loses its purity, and in cold weather becomes frozen; even so does inaction sap the vigors of the mind. <https://www.forbes.com › quotes>

Viswambharan, A. P. and Priya, K. R. (2015). Documentary Analysis as a Qualitative Methodology to Explore Disaster Mental Health: Insights from Analyzing a Documentary on Communal Riots. *Qualitative Research*, 16(1), 42-59.

Vygotsky, L. (1978). Interaction between Learning and Development. *Reading on the Development of Children*, 23(3), 34-41.

Wacker, J. G. (1998). A definition of theory: research guidelines for different theory-building research methods in operations management. *Journal of operations management*, 16(4), 361-385.

Wang, C., Cardon, P. W., Liu, J., & Madni, G. R. (2020). Social and economic factors responsible for environmental performance: A global analysis. *PLoS ONE* 15(8), e0237597. <https://doi.org/10.1371/journal.pone.0237597>

World Commission on Environment and Development. (1987). Report of the world commission on environment and development: our common future, Oxford University Press.

Weber, M. (1947). *"The Theory of Social and Economic Organization"*. Translated by Henderson, A. M. & Parsons, T. NY, The Free Press.

Wertsch, J. V. (1991). *Voices of the Mind: A Sociocultural Approach to Mediated Action*. Cambridge, Harvard University Press.

Westfall, C. (2019). *Why Managing People Is Impossible: What Expert Leaders Do Instead*. <https://www.forbes.com/sites/chriswestfall/2019/05/17/why-managing-people-is-impossible-what-expert-leaders-do-instead/>

Williams, C. (2007). Research Methods. *Journal of Business and Economics Research*, 5(3), 65-72.

Williams, C. G. (2011). Distributed Leadership in South African Schools: Possibilities and Constraints. *South African Journal of Education*, 31, 190-200.

Willumsen, P. L., Kadir, B. A., & Oehmen, J. (2018). *How do you create buy-in in strategy implementation?* Poster session presented at MIT System Design & Management Symposium 2018, Cambridge, United States.

Wisdom, J. P., Cavaleri, M. A., Onwuegbuzie, A. J., & Green, C. A. (2012). Methodological reporting in qualitative, quantitative, and mixed methods health services research articles. *Health Services Research*, 47(2), 721-745.

- World Commission on Environment and Development. (1987). *Our Common Future*. Oxford University Press, Oxford.
- World Health Organization. (2016). *Environmental Health*. https://www.who.int/health-topics/environmental-health#tab=tab_1
- Wrenn, J., & Wrenn, B. (2009). Enhancing Learning by Integrating Theory and Practice. *International Journal of Teaching and Learning in Higher Education*, 21, 258-265.
- Yadav, A. (2016). Role of Education in Sustainable Development of Modern India. *Annals of Education*, 2(2), 80-84.
- Yin, R. (2014). *Case Study Research Design and Methods*. Thousand Oaks, Sage publications, inc.
- Yousafzai, M. (n.d). *Education is the best weapon through which we can fight poverty, ignorance and terrorism*. <https://wp.nyu.edu/dispatch/2018/05/22/eradication-of-global-poverty-begins-with-education/>
- YukI, G. A. (1999). An Evaluation of Conceptual Weaknesses in Transformational and Charismatic Leadership Theories. *Leadership Quarterly*, 10(2), 285-305.
- Yukl, G. A. (2002). *Leadership in Organizations*. Prentice Hall.
- Zainal, Z. (2007). Case Study as a Research Method. *Journal Kemanusiaan*, 9, 1-6.
- Zheng, X., Yin, H., & Liu, Y. (2019). The relationship between distributed leadership and teacher efficacy in China: The mediation of satisfaction and trust. *The Asia-Pacific Education Researcher*, 28(6), 509-518.
- Zou, P. X., Sunindijo, R. Y., & Dainty, A. R. (2014). A mixed methods research design for bridging the gap between research and practice in construction safety. *Safety science*, 70, 316-326.
- Žukauskas, P., Vveinhardt, J., & Andriukaitienė, R. (2018). Research ethics. *Management Culture and Corporate Social Responsibility*, 141.

APPENDIX A: REGISTRATION LETTER



2057

SHABALALA N P MISS
P O BOX 46373
HIBBERDENE
4220

STUDENT NUMBER : 49634062
ENQUIRIES TEL : 0861670411
FAX : (012)429-4150
eMAIL : mandd@unisa.ac.za

2021-01-19

Dear Student

I hereby confirm that you have been registered for the current academic year as follows:

CODE	PAPER	S NAME OF STUDY UNIT	NQF crdts	LANG.	PROVISIONAL EXAMINATION EXAM_DATE	CENTRE(PLACE)
TFENE01		PHD - Education (Environmental Education)	**	E		

Study units registered without formal exams:

You are referred to the "MyRegistration" brochure regarding fees that are forfeited on cancellation of any study units.

- Your attention is drawn to University rules and regulations (www.unisa.ac.za/register). Please note the new requirements for reregistration and the number of credits per year which state that students registered for the first time from 2013, must complete 36 NQF credits in the first year of study, and thereafter must complete 48 NQF credits per year. Students registered for the MBA, MBL and DBL degrees must visit the SBL's ESONline for study material and other important information.
- Readmission rules for Honours: Note that in terms of the Unisa Admission Policy academic activity must be demonstrated to the satisfaction of the University during each year of study. If you fail to meet this requirement in the first year of study, you will be admitted to another year of study. After a second year of not demonstrating academic activity to the satisfaction of the University, you will not be re-admitted, except with the express approval of the Executive Dean of the College in which you are registered. Note too, that this study programme must be completed within three years. Non-compliance will result in your academic exclusion, and you will therefore not be allowed to re-register for a qualification at the same level on the National Qualifications Framework in the same College for a period of five years after such exclusion, after which you will have to re-apply for admission to any such qualification.
- Readmission rules for M&D: Note that in terms of the Unisa Admission Policy, a candidate must complete a Master's qualification within three years. Under exceptional circumstances and on recommendation of the Executive Dean, a candidate may be allowed an extra (fourth) year to complete the qualification. For a Doctoral degree, a candidate must complete the study programme within six years. Under exceptional circumstances, and on recommendation by the Executive Dean, a candidate may be allowed an extra (seventh) year to complete the qualification.
- Your study material is available on www.my.unisa.ac.za, as no printed matter will be made available for the research proposal module. Study material can be accessed on the Unisa website. You must register on MyUnisa (<https://my.unisa.ac.za/portal/>) for this purpose. You are also reminded to activate your myLife email address since all electronic correspondence will be sent to this email address.

BALANCE ON STUDY ACCOUNT: 0.00

Yours faithfully,

Prof M S Mothata
Registrar

0108 0 00 0



University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

APPENDIX B: ETHICAL CLEARANCE CERTIFICATE



UNISA COLLEGE OF EDUCATION ETHICS REVIEW COMMITTEE

Date: 2021/02/10

Ref: **2021/02/10/49634062/31/AM**

Dear Ms NP Shabalala

Name: Ms NP Shabalala

Student No.: 49634062

Decision: Ethics Approval from
2021/02/10 to 2026/02/10

Researcher(s): Name: Ms NP Shabalala
E-mail address: 49634062@mylife.unisa.ac.za
Telephone: 073 572 1539

Supervisor(s): Name: Dr HN Hebe
E-mail address: hebehn@unisa.ac.za
Telephone: 021 429 2234

Name: Prof LE Mnguni
E-mail address: lindelani.mnguni@wits.ac.za
Telephone: 011 171 2764

Title of research:

Managing Environmental Education Curriculum Through Distributed Leadership Strategies in The KwaZulu Natal Secondary Schools

Qualification: PhD Environmental Education

Thank you for the application for research ethics clearance by the UNISA College of Education Ethics Review Committee for the above mentioned research. Ethics approval is granted for the period 2021/02/10 to 2026/02/10.

*The **low risk** application was reviewed by the Ethics Review Committee on 2021/02/10 in compliance with the UNISA Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.*

The proposed research may now commence with the provisions that:

1. The researcher will ensure that the research project adheres to the relevant guidelines set out in the Unisa Covid-19 position statement on research ethics attached.



University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

APPENDIX C: LETTER OF PERMISSION FROM THE HEAD OF DEPARTMENTS OF EDUCATION



KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

OFFICE OF THE HEAD OF DEPARTMENT

Private Bag X9137, PIETERMARITZBURG, 3200
Anton Lembede Building, 247 Burger Street, Pietermaritzburg, 3201
Tel: 033 3921062 / 033-3921051

Email: Phindile.duma@kzndoe.gov.za
Buyi.ntuli@kzndoe.gov.za

Enquiries: Phindile Duma/Buyi Ntuli

Ref.:2/4/8/7084

Miss Nonkanyiso Pamela Shabalala
P.O. Box 463737
HIBBERDENE
4220

Dear Miss Shabalala

PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS

Your application to conduct research entitled: **"MANAGING ENVIRONMENTAL EDUCATION CURRICULUM THROUGH DISTRIBUTED LEADERSHIP STRATEGIES IN THE KWAZULU NATAL SECONDARY SCHOOLS"**: in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the Intended research and interviews are to be conducted.
6. The period of investigation is limited to the period from 25 February 2021 to 10TH October 2023.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Miss Phindile Duma/Mrs Buyi Ntuli at the contact numbers above.
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report/dissertation/thesis must be submitted to the research office of the Department. Please address it to The Office of the HOD, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to schools and institutions in KwaZulu-Natal Department of Education.

Dr. EV Nzama
Head of Department: Education
Date: 25 February 2021

GROWING KWAZULU-NATAL TOGETHER

APPENDIX D: LETTER FOR SCHOOL A, B AND C

Request for Permission to Conduct Research in Selected school

On the research entitled, “MANAGING ENVIRONMENTAL EDUCATION CURRICULUM THROUGH DISTRIBUTED LEADERSHIP STRATEGIES IN THE KWAZULU NATAL SECONDARY SCHOOLS”

Date_____

To: The Principal

Department: Department of Basic Education

Tel:

Dear Principal

I, Shabalala Nonkanyiso Pamella I am doing research under supervision of Dr Hebe Headman N., a lecturer in the Department of Science and Technology Education towards a PhD education at the University of South Africa. We are inviting you to participate in a study entitled “Managing Environmental Education Curriculum through Distributed Leadership Strategies in the KwaZulu Natal Secondary Schools”.

The aim of the study is to investigate secondary school principals, SMT’s, SGB’s, teachers and subject advisors on the managing environmental education curriculum through distributed leadership strategies in the KwaZulu Natal. It is aimed at finding out how principals, SMT’s, SGB’s, teachers and subject advisors in public schools manage environmental education curriculum through distributed leadership. Your school has been selected because it has the responsibility of ensuring that the environmental curriculum is managed in secondary schools through distributed leadership.

The study will entail interviews with three principals, three SMT’s, three SGB’s, three teachers and two subject advisors at the three schools mentioned above and I will also conduct observations in your school, I will observe the Environmental Education lessons and also the leadership patterns towards the management of environmental education curriculum in schools, whether the EE lessons and teachings have any impacts in their daily activities. The interviews

mainly focusses on the distributed leadership practices of principals, SMT's, SGB's, teachers and subject advisors in delaminating the environmental education curriculum and how this impacts on leadership roles in the schools. The benefits of this study lies on the recommendations and contribution on improving the Environmental Education curriculum for the future generation and also recommending practical ways in which principals, SMT's, SGB's, teachers and subject advisors can manage the environmental education curricula in secondary schools.

The study has no any kind of risks at all. There will be no incentives or reimbursement for participants in the research. There will be no reimbursement or any incentives for participation in the research. The feedback procedure of the research result will entail follow up telephonic calls and sending feedback using the school addresses or their personal address.

Yours sincerely

I thank you in advance



Shabalala Nonkanyiso Pamella

Researcher

APPENDIX E: INTERVIEW GUIDE

INTERVIEW GUIDE

For

**PRINCIPALS, SUBJECT ADVISORS, SMTs (deputy principals and/or HODs), SGB
AND TEACHERS**

A. BACKGROUND INFORMATION

1. Organization _____

2. Gender: Male Female

3. Current occupation _____

4. Years in service: -

4.1. As a trainer _____yrs

4.2. In current position _____yrs

4.3. Other assignment(s) _____/ _____yrs

4.4. Total experience _____yrs

B. SEMI-STRUCTURED INTERVIEWS GUIDE

1. How would you describe leadership?

2. Which styles of leadership are you familiar with and which style(s) of leadership do you prefer to use?

3. Are you familiar with distributed leadership and transformational leadership style? Please elaborate.

4. How do you work towards distributing roles to your staff to effect transformation?

5. Would you say that you and your staff work towards the same organizational goals? Please elaborate.

6. Which strategies have you adopted to manage curriculum in your school?
7. In terms of EE curriculum management, does distributed leadership play any role in your institution?
8. As a teacher, principal, SMT, SGB and subject advisor, what is your role in managing EE curriculum?
9. How is communication maintained when distributing roles without raising any conflicts in your institution?
10. How is the staff empowered to deliver and freely participate in decision making concerning curriculum issues?
11. What challenges have you encountered related to distributed leadership when managing EE curriculum?

APPENDIX F: DOCUMENT ANALYSIS GUIDE

DOCUMENT ANALYSIS GUIDE

For

THE RESEARCHER

Date _____

Name of participant: _____

Gender: _____

Document analysis of EE incorporation, implementation, management, and transition of school curriculum

1. Is there any evidence in curriculum documents, workbooks and etcetera to enable EE in pedagogy?
2. How is EE implementation handled?
3. How is EE curriculum managed?
4. What is the curriculum transition and how is it implemented?
5. What does the curriculum transition impact on curriculum management, distributed leadership, transformational leadership, and school curriculum management?
6. Which strategies can contribute to the success of EE curriculum management?

APPENDIX G: OBSERVATION GUIDE

OBSERVATION GUIDE

For

PRINCIPALS, SMT, SGB AND TEACHERS

Date _____

Name of participant: _____

Gender: _____

Observation of the institutional relationships and behaviour of staff

1. Where is the school located and under which cultural background?
2. How is the school designed in terms of its building?
3. What kinds of relationships exist between the following stakeholders: the school principals, SMTs, SGBs, teachers and subject advisors in schools?
4. How do principals, SMTs, SGBs, teachers and subject advisors behave in an educational institution?
5. Which devices are used in the classroom while teaching and how are these learning devices used to incorporate EE in lessons?

APPENDIX H: LETTER TO SUBJECT ADVISORS, PRINCIPALS, DEPUTY/HEAD OF DEPARTMENTS AND TEACHERS

A letter requesting consent of Subject advisors, principals, deputy principals, HODs and teachers to participate in semi-structured interviews

Dear prospective participant

I, Shabalala Nonkanyiso Pamella, a PhD student at the University of South Africa am conducting a research under the supervision of Dr HN Hebe in the Department of Science and Technology, in the College of Education. I am inviting you to participate in a study entitled “Managing Environmental Education Curriculum through Distributed Leadership Strategies in the KwaZulu Natal Secondary Schools”.

This study is expected to enable the collection of important information that could contribute to providing a clear understanding to various stakeholders in education such as school principals, SMTs, SGBs, teachers and subject advisors on the role of distributed leadership in the management of Environmental Education (EE) curriculum in the school context. You are one of the four other interviewees selected from your school to participate in this study. You are invited because of your responsibility, expertise, and experience in the management of the school curriculum. Therefore, your participation is essential as you could help shed some light on the role played by various stakeholders in curriculum management within the school teachers you are supervising. Additionally, by participating in this study you will be contributing towards the enhancement of pedagogical practices within the sphere of education.

If you agree to participate in this study, you will be requested to interact with me in a one-on-one semi-structured interview. The interview will take approximately a maximum of one and half hours and will take place at a mutually agreed upon date, place, and time. Your participation in this study is voluntary. Therefore, you may withdraw from this study at any time without any negative consequences. All information you provide will be kept confidential. Furthermore, to ensure anonymity and confidentiality, your name will not appear in the research report, publications arising from this study and conference presentations aimed at publicising the findings of the study. As it will be the case with other respondents and research sites (i.e., selected schools), your name will not be used, instead; a pseudonym will be used to

identify you from other participants.

If you need further information which would facilitate your decision to participate in the interview, please, do not hesitate to contact me through +27 73 572 1539 or e-mail nkathy.shabalala@gmail.com. If you need further information on this research, you can contact my supervisor- Dr HN Hebe (hebehn@unisa.ac.za) at the University of South Africa (UNISA).

Thank you for taking time to read this information sheet and for participating in this study.

Yours sincerely



Shabalala Nonkanyiso Pamella

Date: 28-01-2021

Researcher

Subject advisor signature _____

Date: _____

**APPENDIX I: CONSENT FORM TO SUBJECT ADVISORS, PRINCIPALS,
DEPUTY/HEAD OF DEPARTMENTS AND TEACHERS**

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____, confirm that the person asking for my consent to take part in this research has told me about the nature, procedure, potential benefits, and anticipated inconvenience of participation. I have read and I understood the study as explained in the information sheet. I had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without any consequences. I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified. In addition, I agree to the recording of the discussion and I have received a signed copy of the informed consent agreement.

Participant _____

Name

Signature

Date

Researcher Shabalala Nonkanyiso Pamella



28-01-2021

Name

Signature

Date

APPENDIX J: EDITOR LETTER

25 August 2022

TO WHOM IT MAY CONCERN

Dear Sir/Madam

Re: Editorial Certificate

This letter serves to prove that the thesis listed below was language edited for proper English, grammar, punctuation, spelling, as well as overall layout and style by myself, proprietor of Dr. Thesis (Pty) Ltd.

Thesis Title: MANAGING ENVIRONMENTAL EDUCATION CURRICULUM THROUGH DISTRIBUTED LEADERSHIP STRATEGIES IN THE KWAZULU-NATAL SECONDARY SCHOOLS

Author


NONKANYISO PAMELLA SHABALALA

The research content or the author's intentions were not altered in any way during the editing process. However, the author has the authority to accept or reject my suggestions and changes. I, the editor can guarantee the quality of my editing and mentorship abilities, however I cannot guarantee that the examination board will accept the thesis with a pass. This will depend on the hard-work, persistence and amount of effort put in by the mentee.

Should you have any questions or concerns about the edited document, I can be contacted at the listed

telephone numbers or email addresses.

Yours truly,
Dr. Eden Padayachee
(Proprietor/ PhD. Medicinal Biochemistry)



Institute of Infectious Disease and Molecular Medicine

Dr. Eden Rebecca Padayachee
PhD Medicinal Biochemistry (Specialized Field: Neuroscience)

Faculty of Health Sciences, Department of Integrative
Biomedical Sciences, Wernher & Beit Building South, Room
N3.13, Anzio Road, Observatory, 7925,
Cape Town

Mobile: [0607883829](tel:0607883829)
Email: padayachee.eden@gmail.com
Website: <https://www.drthesis.online>

