

# Education for Sustainable Development in Eastern Cape secondary schools

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## DECLARATION

I, the undersigned, hereby declare that the work contained in this dissertation is my own original work and that I have not previously in its entirety or in part submitted it to any university for a degree.

MBASSON

10 April 2023

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## **DEDICATION**

I dedicate this study and the attainment of this degree to the Framesby high school matric group of 2020. Being your grade head for five years challenged me in so many ways and set me on this course to empower myself with knowledge and skills to be a better educator. Most of you are nearing the end of your own studies but I hope you will remain lifelong learners.

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## **ABSTRACT**

Sustainable development (SD) is one of the most urgent challenges of our time. Today's world presents an environment with immense degrees of inequality, social exclusion, poverty and environmental destruction. SD refers to the social processes of decision-making and action that ensure the principle of sustainability. These aspirations for a fair and just society can only be realised if every human plays their part. However, the desired change cannot happen without relevant knowledge and competencies; therefore, education is needed as a crucial enabler of transformation. Sustainable Development Goal (SDG) Target 4.7 was thus formulated with the aim of ensuring that all learners acquire the competencies needed to live sustainably by 2030. Education for sustainable development (ESD) is increasingly seen as an integral part of the quality inclusive education that is crucial for creating a sustainable future. The recent Covid-19 pandemic has again highlighted the inequalities and challenges in the South African education system. ESD could play an integral role in addressing these inequalities and challenges, if implemented effectively. Prior research, however, has highlighted that the complexity and uncertainty about the application of sustainability within social and academic institutions may limit any practical accomplishments. It has become clear that although ESD has been around for more than 30 years, many educators, especially at secondary school level, are still uninformed about and ill-equipped for ESD. As a result, secondary schools are sending learners out into the world without the competencies that could create a sustainable and fair world. The purpose of this qualitative study was to explore the role of ESD in Eastern Cape secondary schools, with the aim of identifying best practices as well as challenges in the implementation thereof. Document analysis, following the principles of grounded theory, was employed. The findings revealed that there is a lack of knowledge about ESD in many secondary schools, especially in the public sphere. It has led to the conclusion that the focus should first be on training and professional development of school leadership, as these are the people who should guide the implementation of ESD in their schools.

**Key words:** sustainability, education for sustainable development, secondary schools, school leadership, professional development, teaching strategies

## OPSOMMING

Volhoubare ontwikkeling (VO) is een van die dringendste uitdagings van ons tyd. Die hedendaagse wêreld is 'n omgewing met groot ongelykheid, maatskaplike uitsluiting, armoede en vernietiging van natuurlike hulpbronne. VO verwys na die sosiale prosesse van besluitneming en daadwerklike optrede om volhoubaarheid te verseker. Die doelwitte vir 'n regverdige en gelyke samelewing kan slegs verwesenlik as elkeen 'n bydrae lewer. Hierdie verandering kan egter nie plaasvind sonder die nodige kennis en bevoegdheide nie; juis daarom is die onderwys nodig as 'n deurslaggewende faktor vir transformasie. Die Volhoubare Ontwikkelingsdoelwit (VOD) Teiken 4.7 is juis geformuleer om te verseker dat alle leerders teen 2030 die bevoegdheide ontwikkel om volhoubaar te leef. Onderwys vir Volhoubare Ontwikkeling (OVO) word toenemend beskou as 'n integrale deel van die tipe gehalte en inklusiewe onderwys wat noodsaaklik is vir 'n volhoubare toekoms. Die onlangse Covid-19 pandemie het weereens die ongelykheid en uitdagings in die Suid-Afrikaanse onderwysstelsel onderstreep. OVO sou 'n betekenisvolle rol kon speel om sodanige ongelykhede en uitdagings te takel sou dit effektief geïmplementeer word. Vorige navorsing toon dat die kompleksiteit en onsekerheid ten opsigte van OVO in maatskaplike sowel as opvoedkundige instansies die praktiese uitvoering daarvan belemmer. Dit is duidelik dat daar steeds, veral op hoërskoolvlak, onkunde heers, soos die onderhawige studie toon, alhoewel OVO reeds vir meer as 30 jaar aangemoedig word. Dit beteken dat hoërskole leerders die wêreld instuur sonder die nodige bevoegdheide om 'n volhoubare en regverdige samelewing te bevorder. Die onderhawige studie het ten doel gehad om die rol van OVO in Oos-Kaapse hoërskole te ondersoek om sodoende beste praktyke asook uitdagings in die implementering van OVO te identifiseer. Dokumentanalise, volgens die beginsels van begronde teorie (*grounded theory*) as metode, is uitgevoer. Die bevindinge toon 'n ontbreking van kennis oor OVO in die hoërskoolfase van onderwys, veral in openbare skole. Dit het gelei tot die gevolgtrekking dat die fokus eers op die opleiding en professionele ontwikkeling van skoolleierskapstrukture moet wees, aangesien dit dié groepering is wat die rigting moet aanwys vir die implementering van OVO in hulle skole.

**Sleutelwoorde:** volhoubaarheid, onderwys vir volhoubare ontwikkeling, hoërskole, skoolleierskap, professionele ontwikkeling, onderrigstrategieë

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# CHAPTER 1: OVERVIEW OF THE STUDY

## 1.1 INTRODUCTION

Sustainable development (SD) is one of the most urgent challenges of our time. Today's world presents an environment with immense degrees of inequality, social exclusion, poverty and environmental destruction. The United Nations Agenda 2030 was conceived from this realisation and has as its goal the promotion of prosperity while protecting the environment and the people in it. Here, it is important to distinguish between the terms SD and sustainability, even though they are often used interchangeably. SD refers to the social processes of decision-making and action that ensure the principle of sustainability (Niemczyk, 2022). These aspirations for a fair and just society can only be realised if every human plays their part. However, the desired change cannot happen without relevant knowledge and competencies; therefore, education is needed as a crucial enabler of transformation. Sustainable Development Goal (SDG) Target 4.7 was thus formulated, among others, to show the way forward:

By 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development (Mission 4.7, 2020, para 4).

Education for sustainable development (ESD) is increasingly seen as an integral part of the quality inclusive education that is crucial for creating a sustainable future (Niemczyk, 2022). Even before the "official" formulation of the SDGs, the term ESD became popular when it was adopted at the World Summit on Sustainable Development in Rio de Janeiro in 1992. Then, ESD was defined as "an emerging but dynamic concept that encompasses a new vision of education that seeks to empower people of all ages to assume responsibility for creating a sustainable future" (UNESCO, 2002:5). The reorientation of the education systems of the time was also discussed at the UN World Summit in Johannesburg in 2002 as being key to SD (Nevin, 2008:49). The importance of ESD in promoting the development of the understanding, knowledge, skills, values and actions needed to create a sustainable world was outlined, and the UN forecasted 2005 to 2014 as the Decade of Education for Sustainable Development. Governments were called upon to include the principles of sustainability in their educational strategies (Niemczyk, 2022). So, although the concept of ESD developed from Environmental Education (EE), it has transcended caring for the

environment and has been expanded to address issues of poverty relief, citizenship, peace, ethics, responsibility, democracy, justice, human rights, and gender equality (Nevin, 2008:50). The importance of ESD was again emphasised when five years after the formulation of the SDGs, Mission 4.7 was launched in 2020 with the aim of accelerating this goal (Mission 4.7, 2020). Target 4.7 lies at the core of SDG 4 and contributes to all 17 SDGs, as it is only through an increase in knowledge and the necessary skills that the goals of SD can be achieved. UNESCO (2014:12) explains:

ESD empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity. It is about lifelong learning, and is an integral part of quality education. ESD is holistic and transformational education which addresses learning content and outcomes, pedagogy and the learning environment. It achieves its purpose by transforming society.

The implementation of ESD has been hampered in the past by the ambiguity of the definition. Due to its transformation over the past 20 years, the term ESD has come to mean different things. As indicated by Teise and Le Roux (2016), this could prevent the achievement of its vision to contribute to SD as well as social change. This ambiguity is further reiterated by Kioupi and Voulvoulis (2019) and Niemczyk (2022). The authors assert that the complexity and uncertainty regarding the application of sustainability within social and academic institutions may limit any practical accomplishments. Teise and Le Roux (2016) attempted to clarify what ESD in a South African context should entail, using a model case scenario. This would serve not only as an up-to-date appreciation of the concept, but also as an instructional tool to evaluate the extent to which the education system has responded to the call to advance SD. The above-mentioned authors identified five constitutive elements of ESD, as recommendations to policymakers, to transition from policy to practice. According to Teise and Le Roux (2016), ESD should have an interdisciplinary and holistic approach; be value-driven; entail critical thinking and problem-solving; and be action-oriented, multi-methodological and participatory. ESD should also look to the future and address both local and global issues. Measured against these principles, it seems as if the constitutive elements of ESD are contained in South African education policies. What is not clear, however, is “to what extent education practice in South Africa actually implements ESD” (Teise & Le Roux, 2016:79).

In this comparative study, the extent to which ESD had been implemented in selected Eastern Cape secondary schools (both public and private schools) was investigated to

identify challenges and effective practices that could aid in the implementation of ESD in other secondary schools.

## **1.2 PROBLEM STATEMENT AND RATIONALE**

In 1945, South Africa was one of the 51 founding members of the United Nations (UN), but its membership was suspended 12 years later due to its apartheid policies. In 1994, however, the country was re-admitted after the newly elected government transitioned the country into a democracy. Since then, South Africa has committed itself to the Purposes and Principles of the United Nations Charter (South Africa, 2021). This implies that South Africa is committed to the achievement of the goals as set out in the Sustainable Development Goals (SDGs), adopted by the UN in 2015. The National Development Plan (NDP) Vision 2030 and Africa Agenda 2063 further support and elaborate on these goals (Voluntary National Review, 2019). ESD is a key element of the 2030 Agenda for Sustainable Development. This forms one of the targets of the SDGs on Education and is seen as key to achieving all 17 SDGs (UNESCO, 2019).

Much has been achieved by the country, in terms of the SDGs, since 2015; however, South Africa is still confronted by many challenges that hinder reaching the desired targets (Ontong & Le Grange, 2015). As an educator, my interest in ESD is motivated by the question of how education can contribute towards an improved quality of life for every South African. ESD has the potential to be the vehicle for this transformation, if implemented effectively. In its policies and rhetoric, the South African government is committed to social justice, the eradication of poverty, the improvement of quality of life and reaching its SD targets. However, in one way or another, it seems as if the South African education system has, after 25 years of democracy, failed to contribute to breaking the cycle of poverty and social injustice. Even though the South African government spends more of the country's overall GDP on education than most European countries (6.4% versus 4.8%), many South African schools remain poorly resourced and under-staffed. This has a detrimental effect on literacy, with the literacy rate among Grade 6 learners at 27%. Rural schools are even more notoriously under-resourced, and teachers in these schools are mostly under-trained and ill-equipped to handle the large classes. This causes most learners to leave the school system by the age of 16 with a reading age of only 9 (Rethman, 2019). The research of Van der Berg et al. (2011) confirms that current patterns of poverty and privilege are reinforced by the South African education system.

These issues are even more exigent in 2023 with the world being ravished by the after-effects of the Covid-19 pandemic. Ms Azoulay, Director-General of UNESCO (Mission 4.7,

2020), rightly emphasised, at the launch of Mission 4.7 in December 2020, the crucial role of education in recovering from this pandemic. She stated that it was imperative that as humanity, we should start with what, where and how we learn so it could reflect the society that we want after all this. With only 10 years to achieve the SDGs, it is pivotal to evaluate where we are so that action can be accelerated, especially in South Africa as one of the leading nations on the African continent. It is important to note that ESD “respects yet intentionally goes beyond the ideas, concepts and worldviews that we inherited” (UNESCO, 2020:61) and thus requires a global vision. However, since sustainability as an educational task has not been properly defined and no universal blueprint for sustainability exists, it has been interpreted in many different ways around the world, often according to the context of a specific country or state (Kioupi & Voulvoulis, 2019), making it even more complex and thus difficult for educators to implement ESD in the curriculum. The researcher is aware that research in education alone is not the only answer to the sustainability challenges faced by South Africa. However, finding best practices to implement SDG 4, could make a significant difference in the knowledge, attitudes and values of the citizens that are sent out into the world.

The researcher's interest in researching the status of ESD in South African secondary schools was further informed by a preliminary literature review, which yielded little comprehensive research about the practical implementation of ESD in South African secondary schools. The available research suggests that there are weaknesses in innovative assessment practices and systems for monitoring the impact of ESD on learners, as well as the development and use of ESD monitoring tools (Kioupi & Voulvoulis, 2019). Most available research focuses mainly on environmental education (EE) (Teise, 2013) and not on ESD as an inclusive concept, as defined by UNESCO (2014). These weaknesses in the education system have compelled me to explore the extent to which the Eastern Cape education system, in South Africa, has adopted ESD in school policies, curricula and extramural activities. I hope to develop theories and best practices that could be of use to school management teams (SMTs) and school governing bodies (SGBs) as to the practical implementation and monitoring of ESD in their schools.

Both private and public secondary schools were investigated. Esser and Vliegthart (2017:2) explain that the distinguishing feature of comparative research is that it seeks “to reach conclusions beyond single cases, and explains differences and similarities between objects of analysis and relations between objects against the backdrop of their contextual conditions”. It was, therefore, beneficial to study both private and public secondary schools. Independent/private schools have certain rights and features that differentiate them from

public schools, both in the way they are legally sanctioned and in the way they operate (Eastern Cape Department of Education/ECDOE). This includes following a particular ethos, faith, or philosophy values. Furthermore, public schools are controlled by the State, and independent schools are governed by private entities. Just like public schools, private schools may not discriminate based on race, must be registered with the State, and must maintain standards comparable to those of public institutions. Independent institutions may receive subsidies from the State, but it is not guaranteed (ISASA). Esser and Vliegthart (2017) point out that the objects of analysis should have at least one common, functionally equivalent dimension, which, in the case of the current study, was the fact that they were all Eastern Cape secondary schools that implemented ESD to some extent. The contextual environments might account for the differences in application and success of implementation.

### **1.3 RESEARCH QUESTIONS**

This study is based on the following research questions:

#### **1.3.1 Primary question**

- How effectively do Eastern Cape secondary schools implement ESD?

#### **1.3.2 Subquestions**

- What is the role of ESD in secondary schools?
- What knowledge, skills and attitudes do secondary school learners need to acquire to contribute to a sustainable future?
- What are effective practices in implementing ESD in public secondary schools?
- What are effective practices in implementing ESD in private secondary schools?
- What are the key challenges in implementing ESD in public secondary schools?
- What are the key challenges in implementing ESD in private secondary schools?

### **1.4 RESEARCH OBJECTIVES**

#### **1.4.1 Main objective**

The main objective was as follows:

- to explore how effectively Eastern Cape secondary schools implement ESD.

## **1.4.2 Secondary objectives**

The secondary objectives were as follows:

- to define the role of ESD in secondary schools under investigation;
- to determine the knowledge, skills and attitudes secondary school learners need to acquire to contribute to a sustainable future;
- to identify effective practices in implementing ESD in public secondary schools;
- to identify effective practices in implementing ESD in private secondary schools;
- to identify the key challenges in implementing ESD in public secondary schools;
- to identify the key challenges in implementing ESD in private secondary schools.

## **1.5 CONCEPT CLARIFICATION**

### **1.5.1 Sustainable development (SD)**

The generally accepted definition for SD was coined in 1987 by the Brundtland Commission in an attempt to link the issues of economic development and environmental stability. This often-quoted definition describes SD as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987:41). Emas (2015) argues that this is a broad definition that even touches on the importance of generational equity, which distinguishes it from traditional environmental policies. The concept of integration between economic, environmental and social objects, across sectors, territories and generations sets it apart from other policies. SD is also different from sustainability, as it refers specifically to the processes and pathways used to achieve sustainability. There are others, however, who view the generally accepted definition of SD as too anthropocentric in that the main financiers of SD programmes – such as the International Monetary Fund (IMF) and the World Bank – have certain priorities pertaining to their spending which are often focused on social and economic priorities rather than the protection of the environment (Kopnina, 2018).

### **1.5.2 Environmental education (EE)**

EE is a process through which individuals become aware of their environment and acquire values, skills, knowledge and experiences that will provide them with the determination to act with the purpose of solving present and future environmental problems (UNESCO 1978). EE is thus only one aspect of the integrated concept of ESD.

### **1.5.3 Education for sustainable development (ESD)**

ESD as a concept has been around since 1992 when it was adopted at the World Summit on Sustainable Development in Rio de Janeiro. It developed from EE; however, it has transcended caring for the environment and has been expanded to address issues of poverty relief, citizenship, peace, ethics, responsibility, democracy, justice, human rights and gender equality (Nevin, 2008:50; also Monroe, 2012; Teise, 2013). ESD is a universal concept, but unfortunately, there is no universal blueprint as to what it should contain, and what ESD aims to achieve is not always clear (Kioupi & Voulvouli, 2019). Grosseck et al. (2019) found that the different levels of development and different cultural backgrounds of countries can cause considerable differences in their understanding of ESD. Wals and Kieft (2010), however, believe that the emphasis on learning that promotes the transition towards sustainability is common ground. This includes future education; citizenship education; education for a culture of peace; gender equality and respect for rights; health education; population education; education for protecting and managing natural resources; and education for sustainable consumption. They point out that although ESD includes EE, it is not limited to it. Unfortunately, these two concepts are still used interchangeably or even confused in many countries.

Wals and Kieft (2010) underscore that the “E” in ESD is often forgotten and that the learning strategies in ESD can be conceptualised in different ways, depending on contextual tolerance for participation, independent thinking and self-determination. As a result, a country’s tradition in governance might affect the orientation towards ESD. Where there is limited tolerance, there would likely be stronger emphasis on didactical forms of teaching and knowledge transfer, whereas contexts with more tolerance would probably implement ESD that is characterised by higher levels of participation, knowledge co-creation, critical thinking, and self-determination. The latter, possibly more transformational versions of ESD, would require unconventional teaching and learning strategies that promote the development of new competencies that would bring about a change in people’s behaviour. As such, ESD suggests more than a simple addition of sustainability concepts to some parts of the curriculum. Theisse (2013) asserted that ESD entails a fundamental change in thinking and practice, which offers an education that is relevant and responsive to the challenges of SD. ESD is, therefore, more than a new component to be incorporated into education; rather, it is a completely different perspective on education.

For the purposes of this study, the expanded definition of ESD – which includes integration of environmental, social, and economic concerns – was used. The conceptualisation of the

educational aspect of ESD remains an open-ended question which was determined by the context of the schools investigated.

## **1.6 THEORETICAL FRAMEWORK**

### **1.6.1 Grounded theory**

Studies that apply the grounded theory approach aim towards conceptual thinking and theory building rather than the empirical testing of a theory (Khan, 2014). Theory building is crucial because it contributes to the structure for analysis, assists in the efficient advancement of the field, and is necessary for solving real world problems. Theory building research endeavours to find similarities across many different spheres to define the variables, specify the sphere, build internally logical relationships and make definitive predictions (Walker, 1998). Theory building is inherently a qualitative process using inductive, constructivist methods. This inductive reasoning seeks to identify a valid principle and construct generalisations, relationships and eventually theories by evaluating the data collected for this purpose (Khan, 2014). Khan (2014) further explains that even though the researcher, using the inductive process, might still have some pre-existing interpretations or theories when approaching the problem, they will not seek to approve or invalidate the existing theories but will seek to create outlines, consistencies and significances by collecting data.

It is with this in mind that grounded theory was selected for this research. Classic grounded theory was initiated by Glaser and Strauss in 1976 as a systematic method of qualitative analysis in sociology. It is a distinct method; however, many of its strategies have seeped into the larger field of qualitative study. As a result, it has been developed further into separate versions by, among others, Clark (2005), Charmaz (2014), and Corbin and Strauss (2015).

In a classic grounded theory study, as developed by Glaser and Strauss, the background, research problem, literature review and research questions should be very general in nature, as the researcher should not enter the study with biases or preconceived ideas. It is a method of discovery that uses methods of research revolving around the perspectives of the participants in the sample group. These perspectives are collected by means of open-ended questions that evolve as the theory starts to emerge (Nathaniel, 2020).

Strauss and Corbin, in contrast, provide a detailed outline of analysis that emphasises continuous validation and a combination of inductive and deductive methods. The earlier versions of Strauss and Corbin's grounded theory have objectivist underpinnings; however,

the recent editions advocate the more reflexive role of the researcher that lessens the application of the technical analysis (Timonen et al., 2018).

Charmaz's constructivist grounded theory emphasises the roles of both the researcher and participants in the process of generating knowledge, and the process of interrogating the nature of the knowledge generated is an important starting point (Charmaz, 2017). Timonen et al. (2018), however, argue that the subjectivity inherent in the method of knowledge as an interpretative portrayal in this version could be in conflict with more traditional trends in research that emphasise the importance of generating objective research findings.

Having reviewed each of the three main trends in grounded theory, the key assumption of grounded theory is to remain open to the representations of the world as they are encountered in the research and not to force data into theoretical accounts (Timonen et al., 2018). This can be done while acknowledging existing theories – an idea that has guided evolved grounded theory away from the classic model. The evolved grounded theory model thus seems to be the most appropriate model to use in this research, as it acknowledges what has been done before in the search to understand ESD, but it also allows the researcher to remain open to new findings in the field that could lead to the outlines, consistencies and significances that build new theories.

## **1.7 RESEARCH DESIGN AND METHODOLOGY**

### **1.7.1 Introduction**

The research design and methodology can be deemed the blueprint of the plan regarding the procedures and methods the researcher is to follow in conducting the anticipated research (Creswell, 2009). In the case of this study, a qualitative research design was used, with a document analysis as the research method. Comparative research tries to understand and create awareness. It prevents relativisation and provides access to alternative solutions (Esser & Vliegthart, 2017). They add that comparative analysis provides explanatory relevance of the contextual environment. This understanding of the causal significance of contextual circumstances is why comparative research is highly valuable.

### **1.7.2 Research design**

A qualitative research design was used in this study. Qualitative research is distinguished from quantitative research in that it relies on linguistic rather than numerical data and utilises meaning-based rather than statistical forms of data analysis (Nieuwenhuis, 2020) that promote the understanding of social life through the study of targeted populations or places

(Crossman, 2020). This type of research renders descriptive data that the researcher must interpret, applying meticulous and systematic methods of transcribing and coding. Thereafter, trends and themes are analysed. This is important because in qualitative research, the researcher tries to investigate the importance of contemporary issues (Hammersley, 2013). As this research followed the evolved grounded theory approach, the more systematic, analytical procedures of Strauss and Corbin (1998) were used to collect data. The saturation of categories is accentuated in this approach, where a *category* represents a “unit of information composed of events, happenings and instances” (Nieuwenhuis, 2020:88). The above-mentioned method was suitable for this study, as the collection and analysis of data from the available documents were an integrated and iterative process.

In this comparative study, data were collected, analysed and interpreted by means of document analysis. The documents on the implementation of ESD in Eastern Cape public and private secondary schools were studied in order to find similarities and differences between them. The aim was to analyse and interpret the documents with the intention to (a) address research questions and (b) develop theory and best practices that could serve as guidelines to other secondary schools in South Africa.

According to Esser and Vliegthart (2017), mono-national studies can contribute to comparative research if they are formulated with a larger framework in mind and follow the method of structured, focused comparison by George and Bennet (2004). The method is “structured” in that a researcher uses general questions that are asked of each of the cases under study with the aim of guiding and standardising data collection. These questions reflect the research objectives and make systematic comparison of the findings possible. The method is “focused” in that it only deals with certain aspects of the case under study (George & Bennet, 2005). Esser and Vliegthart (2017:5) add that even isolated, single-country studies can carry universal significance if they are directed as an “implicit” comparison. An implicit comparison needs to be embedded in a comparative context, and the analytical tools should be taken from comparative literature. The case selection should be justified as either representative, prototypical, exemplary, deviant or a critical case. In this study, the selection of secondary schools under study was prototypical, as it had the potential to serve as an example of what could be done in at this level of education as regards ESD.

### **1.7.3 Research paradigm**

Nieuwenhuis (2020:57) argues that a researcher’s choice of method for their study indicates something about their perspective of reality and therefore also the researcher’s ontological

and epistemological position. What then is reality for me? It is only understandable through the human mind and through ideas that have been socially constructed. These meanings are formed using the interpretivist paradigm, which implies that it will be the lens, or organising principle, through which reality will be interpreted. Schwartz and Ogilvy (1979: 28) subscribe to this view by stating that a paradigm is associated with the figurative lenses through which one sees everything – in other words, one's entire belief system or map of reality. These lenses then enable researchers to tell a meaningful story by depicting a world that is functional and purposeful but still subjective.

In this regard, interpretivists understand that reality is not objectively determined but socially constructed. A researcher needs to consider the biased perceptions of human beings and their different interpretations of the world as the starting point in understanding social phenomena (Kelliher, 2005:1). When people are studied in their social contexts, there is a greater chance of understanding these perceptions they have of their own activities. This research paradigm is also concerned with the uniqueness of a particular situation – such as the unique nature of the implementation of ESD in each school in its own context – which will then contribute to the underlying pursuit of contextual depth, or the larger expression of what ESD should look like. Wolhuter et al. (2017) reiterate the importance of this context when they advise researchers to fully consider the contextual similarities and differences between international and their own national education systems in order to assess the suitability of a foreign educational practice for one's own situation, and vice versa. The parts, then, should be studied to understand the whole, but one also has to understand the whole in order to interpret the parts. Further, Kivunja and Kuyini (2017) clarify that the main assumption of the interpretivist paradigm is that reality is socially constructed; hence, it is sometimes called the constructivist paradigm. In this paradigm, theory does not precede research, but as with the grounded theory approach used in this research, it follows it, which grounds it in the data generated in the research process.

#### **1.7.4 Data collection**

In this study, the focus was on using documents as data source. As the majority of this research was done during the Covid-19 pandemic, document analysis was consciously selected as an appropriate data-generation method, considering all the restrictions. All types of written communication, whether printed or electronic, were investigated to see if they could shed light on the phenomenon under investigation. Primary sources of data – such as policies, mission statements, newsletters, reports, posts on websites and social media of the schools involved – were the first sources of information, but secondary sources such as

newspaper reports were also used. Nieuwenhuis (2020) suggests the following criteria when choosing documents to be included in one's study:

- Make sure of the type of document you are dealing with.
- Find the publication date.
- Assess whether the information is based on empirical data, or whether it is anecdotal or based on opinion.
- Consider the context, purpose and intent of the document.
- Identify the main points or arguments that are put forward and how they relate to the research.
- Determine what research methodology was used in an empirical document.

With the above-mentioned criteria in mind, a careful selection of documents, with particular reference to ESD at high school level, were made. This included school policies, newspaper articles, newsletters, websites and social media accounts of high schools, and any other documentation relevant to the study.

#### **1.7.5 Sampling technique**

Qualitative research commonly makes use of purposive sampling. It is exactly what the name suggests: selection of members with a purpose "to represent a phenomenon, group, incident, location or type in relation to a key criterion" (Nieuwenhuis, 2020:93). For this study, theoretical purposive sampling was used, as described by Strauss and Corbin (1998). This method was deemed the most appropriate method for the grounded theory framework of this research. The researcher sampled the websites, newsletters, social media and other appropriate written documentation of Eastern Cape secondary schools (both private and public schools), as well as the relevant documentation of the Eastern Cape Department of Education (ECDOE) based on their potential to address the research questions and thus make a contribution to the development of the theoretical construct on the implementation of ESD in secondary schools.

#### **1.7.6 Sampling sites and sample size**

As regards the sample size, the aim was to start with a large sample to locate a minimum of five private and five public secondary schools that had implemented ESD to some degree into their curriculum and/or extramural activities. The Eastern Cape has around 1 098 registered private schools and 6 000 public schools (ECDOE). All South African public schools are classified into one of five quintiles with the aim of allocating financial resources.

Quintile one is considered the “poorest” quintile, while quintile five is seen as the “least poor”. The poverty rankings are decided at the national level according to the poverty of the community around the school as well as certain infrastructural factors (Grant, 2013). An attempt was made to find a public school representing each of these quintiles. In the case of private schools, the aim was to find schools representing both religious and commercially funded private schools. These contextual differences between public or private secondary schools added further depth to the study. At the time of this study, most of these schools had a school website, social media accounts, or newspaper articles reporting on their ESD activities. After reviewing a large sample, by combing through their websites and social media accounts, only schools that had relevant documentation on SD and/or ESD were included in the study. First of all, the primary schools were discarded as this study focuses on secondary schools. Since 718 of the 838 of the public high schools in the Eastern Cape are Quintile 1 – 3 schools, who rely on the government for funding, and are as a result, severely under-resourced, they had to be eliminated early on in the selection process as the researcher could not find sufficient documentation to use for document analysis. The remaining 120 were scanned before five were selectively chosen to be studied. Similarly, the independent primary schools were eliminated and 41 secondary private schools were scanned for information before five were chosen as representatives of best practices. This study is, as a result not representative of the lowest income public and private schools in the province.

### **1.7.7 Data analysis**

While selecting, evaluating and synthesising the documents, they were also analysed. In qualitative studies, data analysis can be ongoing, which involves reflection, asking analytical questions and making notes (Creswell, 2009). As Labuschagne (2003) indicates, the document analysis produces data – excerpts, quotations, or even entire passages – are then organised into major themes, categories and case examples through content analysis. Bowen (2009:23) supports this view and describes content analysis as the practice of organising information into categories related to the research questions. In line with grounded theory, the data analysis process included open-axial-and selective coding. In grounded theory research, data collection and theory generation are deliberately fused so that initial data analysis can be used to guide continuing data collection. This, in turn, should lead to the saturation of recurring categories, as well as the opportunity to follow up on unexpected findings (Glaser & Strauss, 1976, as cited in Nieuwenhuis, 2020). As a first step, the textual data were broken up into discrete parts (open coding), after which connections were drawn up (axial coding). The last step was selective coding where central categories or

themes were selected that connected all the codes from the analysis. According to Corbin and Strauss (1990), the purpose of central categories is to capture essence, which is the central phenomenon of the research.

## **1.8 TRUSTWORTHINESS AND CREDIBILITY**

Qualitative research differs from quantitative research in that it does not test theory nor is it outcome-oriented: it is concerned with the meaning-making of phenomena. The attention is on the social background against which events occur and have meaning, and the researcher tries to understand the social world from the perspective of the participants or reported information in the documents. The trustworthiness and credibility of qualitative data thus to a great extent depend on the methodological skill and sensitivity of the researcher. Content analysis requires more than just reading to see what is there; credibility centres around identification and documentation of recurrent, accurate, homogeneous or heterogeneous features as patterns, themes and worldviews (Labuschagne, 2003). In the current study, thorough, authentic descriptions of each step undertaken were provided to be transparent and provide credibility to the findings.

While interpretivist research is valued for its ability to provide contextual depth, it has its fair share of criticism concerning the validity, reliability and generalisability of its results (Kelhiher, 2005). A researcher using this paradigm should be aware of its shortcomings to obtain research legitimisation. However, some qualitative researchers would like to dismiss anything that might link qualitative enquiry to the positivist quantitative approach and would thus reject the terms validity and reliability when referring to qualitative research (Tobin & Begley, 2004:389). Morse (1999) cautioned against this outright vilification, as it could result in qualitative research being rejected as a science. Her viewpoint is that science is thorough and pays attention to detail, and by rejecting the concepts of validity and reliability, the concept of rigour is rejected. In response to Morse's viewpoint, Tobin and Begley (2004) suggested that qualitative researchers place the concept of rigour within the epistemology of their work and make it more appropriate to their aims as a way to ensure that their findings represent reality. This viewpoint does, however, still have its critics, with Arminio and Hultgren (2002) and Van Manen (1990) challenging the concept of rigour, contending that by its very nature, it is an empirical analytical term that does not belong in an interpretive approach.

How, then, do qualitative researchers ensure that their research is valid? As the first main surge of qualitative literature hit the academic landscape in the 1980s, Lincoln and Guba introduced their ideas on trustworthiness (Tobin & Begley, 2004). Their ideas presented an

opening for naturalistic enquirers to explore new ways of indicating validity, reliability and generalisability outside the linguistic confines of a rationalistic paradigm. Even though their criterion was by no means perfect, it provided a platform from which innovative ideas could be launched. The idea that triangulation was the only method to establish completeness was also challenged. From early on, it was seen as a means of bringing together rationalistic and naturalistic paradigms to ensure validity (Duffy, 1987).

While triangulation holds the idea that a concept is two-dimensional, crystallisation – a new way of looking at a problem – proposes that concepts have many different angles. Crystallisation shifts the scientific idea that something is fixed towards the idea that concepts are multidimensional, with infinite varieties of shapes, substances and angles of approach (Tobin & Begley, 2004). Steward et al. (2017) likened the process of crystallisation to that of a perceptive seer who delves deeply into a mystery with the solid belief that the discovery will be rich, credible and trustworthy.

Using a crystallised research design equips the interpretive researcher with the capacity to raise awareness, while the interpretive paradigm, aligned with abductive reasoning, brings different approaches to light (Spens & Kovacs, 2006, as cited in Stewart et al., 2017). Similarly, the grounded theory approach that was used as the theoretical grounding of this research aims at increasing the “density” and “saturation” of recurring categories (Glaser & Strauss, 1967, as cited in Nieuwenhuis, 2020). In this research, the focus was on how effectively ESD had been implemented in both private and public secondary schools of the Eastern Cape at the time of this study. This topic was studied from various angles, using a variety of written sources to identify effective practices as well as challenges in the implementation of ESD in secondary schools. As this research was conducted during the continuing 2020/22 Covid-19 pandemic, a fresh awareness of the many inequalities and challenges in education emerged, and the importance of finding new ways to interpret and find meaning in social phenomena for the betterment of education for all became more urgent than ever.

## **1.9 ETHICAL CONSIDERATIONS**

Document analysis was used for this research study. Documentary research offers a means of promoting methodological pluralism, which is appropriate for research in a field as diverse as education (McCulloch, 2012). All resources used were sourced from documents that were freely available in the public domain, none of which contained confidential information, risks, or were a contravention of security requirements. McCulloch (2011) does warn that ethical considerations are often overlooked when doing documentary research, as there is little or

no direct interaction with those being researched. Ethical issues may, however, arise when a school, an educator, or an educational institution is named in the research. Legal issues should also be borne in mind, as the laws on copyright, freedom of information and data protection are highly relevant to documentary research.

It is with this in mind that the selected documents were acknowledged by using specific identifiers, and thus anonymity of the schools was maintained.

## **1.10 CONCLUSION**

This chapter provided an orientation to the study. The research problem was discussed, and the research questions were listed. The main aim of this research was to explore how effectively South African secondary schools (both public and private) in the Eastern Cape province implemented ESD. Framed within grounded theory as the theoretical foundation for this qualitative research, document analysis within the interpretative paradigm was identified as the most appropriate research method to be employed in realising the objectives of this study.

## **CHAPTER 2: EDUCATION FOR SUSTAINABLE DEVELOPMENT – AN OVERVIEW**

### **2.1 INTRODUCTION**

As indicated in section 1.10, the nature, role, evaluation of and pedagogies for ESD as well as the knowledge, skills and attitudes secondary school learners need so as to contribute to a sustainable future are explored. Context in comparative education matters, as the nature of sustainability issues a country faces could affect the SD components that are emphasised in ESD. Therefore, this chapter also reviews the key sustainability challenges in South Africa, with specific reference to the Eastern Cape Province, which was the focus of this study. Lastly, the barriers to sustainability outcomes in educational institutions are discussed.

Ramsarup (2013), in a survey of *National journeys towards ESD*, reported positive developments in South African education as well as some obstacles and gaps in the implementation of ESD that had to be addressed. At the time, the most important development was the change in educational curriculum to the *National Curriculum Statement* and the development of the *Curriculum Assessment Policy Statements (CAPS)*, which integrated plentiful options for assessment of ESD learning into the framework (Ramsarup, 2013). SD principles such as poverty, inequality, gender, language, race, age and disability are issues of diversity, and these principles, together with contemporary environmental content, were integrated into almost every level and subject of the schooling system (DBE). According to Ramsarup (2013), CAPS also supports issues such as critical and active learning, a high level of knowledge and skills, social transformation, the value of indigenous knowledge systems, efficiency, quality and credibility. However, the fact that a curriculum includes principles of ESD does not mean that ESD has been implemented successfully.

In 2015, when the United Nations Decade of Education for Sustainable Development was declared, the emphasis was on the use of participatory learning and teaching methods that would encourage and empower learners to change their behaviour and take action for SD (Ramsarup, 2013). Kioupi and Voulvoulis (2019) found that a participatory framework is needed that would allow educators and stakeholders, together with learners, to decide on common visions for sustainability. Education can be a systemic tool for transformative social change if all stakeholders work together towards a well-defined goal. However, in her evaluation of ESD in South Africa, Ramsarup (2013) found that there was no comprehensive

national system in place to monitor the progress, quality or gaps of ESD implementation in the country. She added that teachers with inadequate initial training struggled to make sense of ESD aspects in the curriculum. Furthermore, Ramsurap indicated that an inundation of school-based ESD projects, which had to be operated outside of school hours, overburdened teachers. Seven years later, Du Plessis and Letshwene (2020) found that some of the teachers' complaints about CAPS were that it focused too much on assessment, leaving too little time for teaching and learning. As a result, learners were often assessed without first obtaining enough knowledge. Under-qualified teachers were also a challenge, with the participants in the study indicating that new content was regularly added in certain subjects while teachers were not trained or equipped to teach the new content. One such example that was mentioned was in the subject Geography – a subject ideally suited to ESD. Geography teachers in the study reported that “land survey” was added, but since teachers were not trained for this, most would just skip the section or treat it as a classroom activity instead of the interactive, outdoors activity it was meant to be. The above-mentioned examples raised questions about the priority given to participatory learning and teaching methods (Ramsurap, 2013) or participatory decision-making on sustainable matters and thus issues of inequality (Ramsurap, 2013) on the agenda of the South African education system.

In the next section, the nature of ESD is examined, since a common understanding of what ESD entails, according to Kioupi and Voulvoulis (2019) and Teise and Le Roux (2016), could be a step forward in effectively relating it to the SDGs and implementing it.

## **2.2 THE NATURE OF ESD**

The concept of ESD has evolved and expanded since its conception as EE in 1977 at the world's first intergovernmental conference on environmental education organised by UNESCO in conjunction with the UN Environment Programme. It has become an all-inclusive concept, focusing on how education can help to achieve the 17 SDGs as formulated by the UN in the 2030 Agenda (Reickman, 2018).

In its broadest sense, ESD is education aimed at social transformation with the goal of creating more sustainable societies. The role of education is to help bring about a world that is more sustainable, peaceful and just by empowering individuals and communities with knowledge, skills and values that would allow them to make informed sustainable decisions and take sustainable actions. The most widely used definition of ESD, coined by UNESCO (2014:12), states that “ESD empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity”. This definition implies that learners

should be taught to value a balanced approach to three aspects – environment, economy and society – which should bring a heightened awareness of the need to change (Lotz-Sisitka et al., 2019). This seems a very noble cause; however, not everyone agrees with the UN notion of what ESD is supposed to entail.

The alternative voices argue that the UN concept of ESD is based on unrealistic assumptions. The UN assumes that development can be sustainable and that people who are taught how to do this will live sustainable lives (McGregor, 2013). Selby (2006) – one of the foremost critics of the UN approach to ESD – claims that ESD stands on “shaky ground” (Selby, 2006:355) if it relies on a goal to be successful; has a short-sighted acceptance of the growth principle, which is to the detriment of the Earth’s condition; has an instrumentalist view of nature; depends on an overly skills/training approach; marginalises the important voices of certain educators. Selby’s foremost problem with mainstream ESD is that it “conceives of nature as a resource or commodity” (Selby, 2017:1). He feels that this type of ESD, where the learner is disconnected from nature, would not motivate a learner to change their behaviour. The same principle could be applied to human relations and issues such as poverty and inequality, as “we only stir ourselves to protect what we have come to love” (Selby 2017:1). He is supported by authors such as Arjen Wals (2010a), who believes that one cannot be educated *for* sustainability but should rather “unlearn unsustainability”, which would require an emancipatory process where students are taken to a place where they can experience different mind shifts (*gestalt-switching*). John Huckle (McGregor, 2013) has an issue with the weak model of sustainability of the UN, which is reformist and seeks to find a better balance between economic growth, social welfare and environmental issues only, instead of radically reshaping social and economic welfare to fit within ecological limits. Ireland (2007) is another voice who rejects the notion of education *for* sustainable development. She designed an all-encompassing ecological approach to educate *for* sustainability (EfS), which also eschews the notion of development in favour of sustainability, with the living Earth (Gaia) as central point.

In summary, these alternative voices to the UN or “normative” notion of ESD all take exception to the fact that ESD, as prescribed by the UN, views nature as a means to an end to increase economic growth (Kelly, 2007) instead of what Selby (2007) calls “sustainable contraction”, which is a more ecological approach. The result of all these paradigms underscore the dilemma that there is no clear definition in respect of the nature of ESD. Kioupi and Voulvoulis (2019) highlight that even after the UN Decade of ESD and the further extension of the 17 SDGs to 2030, the complexity of sustainability as a concept makes it difficult to define. What can probably be agreed on is that, ideally, ESD is holistic and

transformational education that deals with learning content and results, the context of learning, and the pedagogy to achieve its outcome, which is to transform society (Lotz-Sisitka et al., 2019).

Different authors have tried to outline what should be included in this holistic, interdisciplinary, future oriented ESD curriculum, other than the obvious 17 SDGs. UNESCO (2014) emphasised climate change, or as Selby would define it, “global heating” (Selby, 2007), disaster risk education, biodiversity, poverty reduction, and sustainable consumption. Wals and Kieft (2010) included future education, citizenship education, education for a culture of peace, gender equality, respect for rights, health and well-being education, population education, and education for protecting and managing natural resources. Lotz-Sisitka et al. (2019) added in their “sustainability starts with teachers” course education about waste, food, sense of place, global trade, and ethical and social justice issues.

The exact nature of ESD could probably still be debated by researchers for years to come without finding a conclusive definition; however, it is crucial to try and define this concept and categorise it into manageable boundaries so it can be practically implemented by educational leaders and teachers. Kioupi and Voulvoulis (2019) observed that the misconceptions about the nature of ESD and the limited practicality of truly making a difference have provoked pessimism and diminished motivation to implement ESD. However, regardless from which perspective ESD is approached, essentially, it is about using education to shape a better tomorrow for all – and it must start today (UNESCO, 2014:8).

### **2.3 THE ROLE OF ESD**

As with the nature of ESD, there are opposing viewpoints on the role of ESD. Scholars ponder whether it is to educate *for sustainable development* (UNESCO, 2012), which, according to Selby (2006), calls for the conservation of development rather than the conservation of nature; to help humanity retreat into a future state of “sustainable moderation” (Selby 2010); to “unlearn unsustainability” instead of being educated *for sustainability* (Wals, 2010a); to help students learn something *by themselves* about how to live sustainably (Jickling & Wals, 2008); to help learners live life from a different *frame of mind* (Huckle, 2009); or to educate *around* or *for sustainability* (Ireland, 2007).

According to Lotz-Sisitka et al. (2019), the role of ESD is to empower learners to make informed choices and to act responsibly to preserve the environment, assure economic viability and ensure a just society for present and future generations. This includes creating lifelong learners who will transform society into a more peaceful, just, tolerant, secure and

sustainable world. Kioupi and Voulvoulis (2019) agree on education being a tool with which to reshape the values and worldviews of learners to address the sustainability issues faced by humanity. However, they point out that these changes are often as a result of the external influence by institutions that are beyond the control of the individual. This is one of the main bones of contention that critics have with the “official” UNESCO communication about ESD.

All of the above-mentioned critics of the UN approach to ESD argue that objectives that are forced “from the top down” will add to the indoctrination of learners and will not lead to enlightenment (McGregor, 2013). Various researchers advocate that the role of ESD should be to focus more on transformation and less on the mere transmission of knowledge; it should teach “how” to think and not “what” to think, and it should view learning as a process that involves emotion, passions, context, social and spiritual life, not just intellect (Barth et al., 2007). Wals (2010a) supports this viewpoint when he states that the role of ESD educators should be to use an emancipatory approach to help learners unfreeze their existing and ingrained thinking patterns and push them over the edge to make sure they are able to break with current routines and habits – in other words, ESD should help learners think critically, which would result in mind shifts. This is similar to Selby’s (2010) opinion that ESD should equip learners to deal with the temporariness, elusiveness and ineffability of the world that they occupy and is echoed in chapter 2 of *Securing the Future*, the British strategy for SD (Defra, 2005:25) which states that “information alone does not lead to behaviour change or close the so-called attitude-behaviour gap”.

Ultimately, the role of ESD is to prepare learners to become lifelong learners who are empowered, engaged, reflective and skilled citizens (denizens). Only then can humanity chart the way towards a fairer, safer and greener planet for all (UNESCO, 2016). However, Jickling (2016) argues that this mainstream concept of SD does not do enough to develop critical, innovative and imaginative thinking about SD and the SDGs in particular. His view is that the ideal would be to enable learners to participate intelligently in the debate between those who follow a more ecocentric worldview and those who follow an anthropocentric worldview (Jickling, 1992).

## **2.4 COMPETENCIES NEEDED**

Ideally, learners should leave formal education with the knowledge, attitude and skills needed to become lifelong learners who are empowered, engaged, reflective and skilled citizens. For the purposes of this study, the definition of “competence as a functionally linked complex of knowledge, skills, and attitudes that enable successful task performance and problem-solving”, as developed by Baartman et al. (2007), is used. Education is viewed as

an enabler of this change in attitude and behaviour when SD is taught through the curriculum and by example (Huckle, 2009). Huckle warns, however, that while it may be possible to agree on the knowledge, skills and attitudes/values that learners should acquire, the task is fraught with intellectual difficulties, as well as political and philosophical obstacles. In this section, the knowledge, attitudes and skills that learners should ideally acquire are discussed in separate subsections.

#### **2.4.1 Knowledge**

Huckle (2009), Hunter and Jordan (2020) and Lotz-Sisitka et al. (2019) agree that learners should become sustainably/environmentally literate. This means that they acquire knowledge that would give them the ability to make and justify logical and reasoned judgements in the fields of the environment, ethics and SD. Huckle (2009) argues that learners should be able to distinguish between different political approaches to SD and to form, at least provisionally, their own beliefs about developments around SD. Hunter and Jordan (2020) reason that learners with flexible knowledge about the environment and SD would be more concerned about the environment, as their awareness would lead to practices and behaviours reflecting that concern. They do add, however, that knowledge alone would not lead to change; knowledge needs to be internalised. Normative knowledge (Wiek et al., 2011), which is concerned with issues such as equity and justice, would link the three legs of SD, namely environment, economy and society. Darkin et al. (2004:30) explain:

A sustainably literate person is able to understand the need to change to a more sustainable way of doing things, has sufficient knowledge and skills to decide and act in a way that favours SD, and recognises and rewards other people's decisions and actions that favour SD.

Kioupi and Voulvoulis (2019) add to the above state-of-the-planet knowledge, which involves deep scientific knowledge and understanding of natural concepts and phenomena. Furthermore, knowledge linked to socio-cultural factors seems to be important. Libarkin et al. (2018), Littrell et al. (2020), Selby (2010) and Stevenson and Peterson (2016) support Hunter and Jordan (2020) in their plea for knowledge that is internalised. According to these authors, such internalisation happens through knowledge linked to socio-cultural factors, which links knowledge about SD to the personal lives of learners. Knowledge about SD on its own would be too overwhelming and could lead to feelings of hopelessness and helplessness but learning that is closely tied to personal experience leads to change, as there is a greater sense of hope, identity and self-efficacy. A study conducted by Lotz-Sisitka et al. (2019) confirms this, as students who underwent the SD programme showed a marked shift away

from simply seeing SD as the management of natural resources to emphasising the role they played in their daily lives to make the world a better place. They seemed to have gained knowledge about their own sense of responsibility for SD.

#### **2.4.2 Skills**

Even though knowledge is the first step in ESD, it is not meaningful if it does not translate into a change of attitude and the skills to navigate the process of SD. Wiek et al. (2011) identified five key competencies or skills that need to be developed in an ESD programme. The first competence is *systems thinking competence*, also called holistic thinking (Huckle, 1991), interdisciplinary collaboration (Kioupi & Voulvoulis, 2019) or connectivism (Wals, 2010b). It includes perspectives from various stakeholders and involves the ability to know and examine the complex systems of the environment, economy and society at local and global levels. The second competence identified by these authors is *anticipatory competence*, also referred to as future oriented thinking. This skill enables a person to “see” into the future and to take into account the future implications of current actions in order to come up with solutions to possible sustainability issues in the future. The third competence is *normative competence*, also known as value-focused, ethical or orientation thinking. This skill takes into account both individual and societal beliefs, norms and values in order to reach sustainability goals collectively. Normative competence is dependent on normative knowledge of issues such as justice and equity. *Strategic competence/thinking* is the fourth skill which gives an individual the ability to set goals and plans and to implement and evaluate projects with the goal of finding and implementing solutions towards sustainability. The last competence mentioned by Wiek et al. (2011) is *interpersonal competence*, or as Kioupi and Voulvoulis (2019) describe it, the skill to collaborate or communicate effectively. This means that an individual will have the ability to work together with others towards a goal.

In addition to the above-mentioned five skills, Corcoran et al. (2021) add the skill of reflexivity or self-awareness. This is the ability to understand one’s personal beliefs, motivations and feelings towards others. It includes an understanding of possible tensions, subtle differences and contradictions in SD for the sake of making ethical decisions. Similar to this is a skill Wals (2010a) calls *gestalt-switching*, which is the ability to switch back and forth between different mindsets to see things in a new way.

According to Hanss and Bohm (2010), it is also important for learners to develop an SD self-efficacy, which includes the ability to promote social fairness and economic welfare through their actions and consumption; the willingness and skill to promote environmental preservation through their own actions; and the encouragement of others to follow suit. The

role of collective self-efficacy, in addition to self-efficacy, as explored by Chen (2015), has been found to be even more important in changing behaviour. Critical thinking, emotional intelligence, the ability to use media, and integrated problem-solving are also skills that have been mentioned (Kioupi & Voulvoulis, 2019).

### 2.4.3 Attitudes/values

Knowledge about and skills in SD would be worthless without the right attitudes or values towards it. *The Encyclopedia of Sustainability in Higher Education* defines “attitude change towards SD” as follows:

A change in one’s feelings towards the issues related to environment, society or economy. It is about developing a concern and feeling for the planet earth and life on it (humans and other living creatures). In other words, a change in attitude towards SD refers to feeling bad for environmental destruction, climate change, oppression, and socioeconomic injustice. It also involves a strong feeling of undertaking pro-sustainability actions at individual or collective levels. (Kalsoom, 2019: para 1)

Kioupi and Voulvoulis (2019) identified “virtue”, or the attitude of doing the right thing in the right situation, as an attitude/value that needs to be developed in learners. As children learn values by observing what others do and drawing conclusions about what they think is important in life (Halstead & Taylor, 2000), it is vital to not only teach about sustainability but to model examples of living sustainably. Theodore Roosevelt rightly said that “to educate a person in mind and not morals, is to educate a menace to society”. However, because values are so personal, educators need to be careful not to “teach” learners to adopt specific values (Newman, 2010). In fact, some commentators question a policy-driven, authoritarian approach. Jickling and Wals (2008:5) remarked that “[f]orcing consensus about an ambiguous issue such as sustainable development is undesirable ... and essentially mis-educative”.

In a study conducted by Murray et al. (2012), five values that increased significantly in students after attending an SD course were *warm relationships*, which implies a focus on others; *universalism*, which is defined as to believe in social justice and equality, being broadminded, unity with nature and environmental protection; *benevolence*, which is the quality of helpfulness, honesty, forgiveness, loyalty and responsibility; *security*, which involves cleanliness and reciprocation of favours in order to maintain national and familial security and social order; and *tradition*, defined as respect for tradition, humbleness, devotion and modesty (Schwartz, 2012).

From a spiritual perspective, Adriance (2011, par 12) summarised seven values or qualities that are necessary for a transition to SD:

- a deep sense of world citizenship
- a commitment to justice
- an inclination towards treating one another with love and compassion
- a commitment to stewardship of the earth
- a willingness to sacrifice for the betterment of society
- moderation
- detachment from the things of this world.

In addition, Selby (McGregor, 2013) advocates for the value of *fearlessness*, where learners are made to face their fears of looking weak, failure, being powerless, or even being regarded as having an unhealthy interest in disturbing subjects. Only then would learners feel powerful enough to deal with and resolve sustainability problems (McGregor, 2013).

It is clear from the above that providing learners with academic knowledge about SD is not enough; ESD should be implemented by means of a holistic approach, addressing knowledge, skills and values. In the next section, the pedagogies for ESD that would support such a holistic approach are explored.

## **2.5 PEDAGOGIES FOR ESD**

The discourse around suitable pedagogies for ESD emphasises the important role of educators to ensure a sustainable future (McGregor, 2013). According to Wals (2011), the role of educators is to help students reach a point of uncertainty which cause internal doubt about their current actions. These are necessary to ensure mind shifts about sustainability. This would then lead to what he calls *gestalt-switching* or paradigm-shifting to a new way of seeing things. Ireland (2007) promotes the same idea through her chaos concept. It conveys the idea that order will emerge, even though it is not predictable, which will cause a radical shift in perceptions.

Several authors agree that this kind of paradigm shift happens best in networks (Wals, 2011); through collective learning in inter- and transdisciplinary teams (Kioupi & Voulvoulis, 2019); through holism (Ireland, 2007); or through participatory pedagogies (Ramsurap, 2013). This participatory approach celebrates the complex and the power of collective thinking and ensures that learners interact with as many people and perspectives as

possible. Something more impactful can be created by working and learning together than by doing it alone.

Another pedagogical aspect that seems to be supported by many authors in the field of ESD is the use of a place-based approach, also called localisation (Huckle, 2009; Ireland, 2007; Kelly, 2007; Littrell et al., 2020; Monroe et al., 2017; Selby, 2010). Studies conducted by Littrell et al. (2020) and Walsh and Cordero (2019) showed that this approach significantly improved students' environmental identities. These students saw themselves as people who could actually do something about climate change after creating student films about its impact in their local environments. In a literature review on effective climate change education (CCE) strategies, Monroe et al. (2017) support this idea. They found that it is important to equip learners with knowledge that is personally relevant and meaningful to them. Other research (e.g., Corner et al., 2015; Li & Monroe, 2019; Stapleton, 2019) confirms that teaching learners about the personal relevance of actions they can take to reduce climate change helps them to feel less overwhelmed and powerless and leads to greater self-efficacy and hope concerning their abilities to make a difference. This positive outcome of using a place-based approach to climate change could probably be applied in many other areas of ESD, yielding the same results if learners could be helped to discover that these issues affect them and their communities personally. Selby (2010) argues that connection to a place, together with the knowledge to live and learn within that environment, is inherent in the restitution and restoration of that environment.

There are various pedagogies that can achieve this localised, paradigm-shifting goal of ESD. It is, however, important that these pedagogies engage the cognitive, psychomotor and affective domains of learners (Kioupi & Voulvoulis, 2019) to ensure they are drivers of change and not just knowledge transmitters. According to these authors, pedagogies that are suitable for developing lasting sustainability competences include, but are not limited to, "problem- and project-based learning, active learning, community service learning, critical emancipatory pedagogy, place-based environmental education, eco-justice and community learning, and traditional ecological knowledge" (Kioupi & Voulvoulis, 2019:10). Lotz-Sisitka et al. (2019) add to these pedagogies experiential learning, which is grounded in the local environment. Siegner and Stapert (2020) explored a strategy in which a "human face" is given to ESD by integrating humanities and science. With this approach, storytelling, narrative and other strategies associated with the humanities are used to increase engagement and hope in response to scientific facts rather than negative, detached

reactions. In the Netherlands, the EE and ESD curricula involve nationwide activities in nature, such as “*bosweek*”, or forest week, when learners camp out and perform scouting activities, and “*schooltuinen*” where learners learn basic gardening skills on small plots of land (Kopnina, 2011).

These pedagogies are all linked to an emancipatory approach to learning, which encourages an awareness of injustice and leads to action that will lead to lasting change, rather than the traditional instrumentalist approach, which focuses on simply gaining knowledge. Emancipatory learning respects hybridity, collaboration, the blurring of boundaries, an openness between generations, cultures, institutions, et cetera (Wals, 2010b), and a multilayered reality (Giddings et al., 2002).

According to Kioupi and Voulvoulis (2019), Lotz-Sisitka et al. (2019), Murray et al. (2012) and Siegner and Stapert (2020), teaching techniques that can complement these pedagogies include the following:

- case studies that present learners with open-ended questions about complex real-world problems
- community and social justice activities where learners address social justice issues that would benefit the community
- analyses about life cycle and supply chains
- environmental education that enhances understanding of the ecology of a certain place, linked with the emotional motivation to care for it
- role playing to attain new insights on the perspectives of others
- participatory action research that encourages the development of interdisciplinary teams
- discussions that enable various perspectives and encourage listening and self-reflection
- stimulus activities that use visual prompts such as videos and photos
- reflexive activities in which learners are confronted by their personal roles, actions and attitudes towards sustainability
- the use of projects to address tangible ideas such as personal consumption
- the use of storytelling and other strategies to personalise sustainability.

These emerging pedagogies and strategies veer away from the traditional educator–learner relationship – where the teacher is the authoritative party who teaches and the learner the

one who must absorb knowledge – and treat both as partners in change. Educators lead learners to discover new ideas and create a learning environment that helps learners make connections, create networks and form new paradigms (Wals, 2013), and model, rather than enforce, values of sustainability (Murray & Murray, 2007).

## **2.6 APPROACHES TO ESD IN EDUCATIONAL INSTITUTIONS**

Like there is no universal definition of ESD, there is no single uniform approach to the implementation of ESD in schools. In this section, a few different approaches are explored.

### **2.6.1 Incorporation of ESD concepts into certain subjects**

ESD concepts have historically been most naturally incorporated into the social sciences, but unfortunately, these subjects have become increasingly marginalised because of the narrower focus on vocational qualifications. If this is the favoured approach to ESD, it will lead to very ineffective implementation (UNESCO MGIEP, 2017). It is also not an ideal approach, because conventional coverage of the violent histories of countries usually involves either glorifying and minimising human losses during conflicts or emphasising the unique and distinctive nature of the country's own victimhood while belittling or completely ignoring the suffering of foreigners. In the context of ESD, these one-sided stories do not invite critical discussions and inhibit the effectiveness of ESD. Even when ESD is incorporated into the natural sciences, the worldviews of humankind vs nature are often skewed. Ashley (2000) commented that science can generally be an unreliable friend to EE and that environmental scientists are usually very sceptical about the capacity of schools to do justice to EE (Groenewald, 2004). As can be seen in barriers to sustainability outcomes, teachers are often inadequately trained to engage with ESD concepts (Ramsurap, 2013). According to Legrouri and Sendide (in UNESCO, 2013) the treatment of school subjects as independent entities also poses a problem in this approach, as certain subjects, like science and technology, just cannot be split when it comes to ESD.

### **2.6.2 Regional centres of expertise (RCE)**

To support schools and educators with the implementation of ESD, the RCE concept was developed by the United Nations University (UNU). Within these networks, university departments, NGOs, businesses and public authorities assist schools in developing their ESD programmes (Læssøe, 2009). Currently, there are 170 acknowledged RCEs around the world that collaborate with schools to deal with various environmental issues within their regions (rcenetwork.org), such as an energy efficiency project in the Marrakech region of

Morocco, which is a collaboration between the University of Marrakech and several primary schools (Legrouri & Sendide, 2013) and numerous other local projects. There are also international projects such as the Young Masters Programme on Sustainable Development, which is a web-based, interactive distance-learning course for 16–18-year-olds across the world. It is done in collaboration with UNESCO and run by Lund University in Sweden (UNESCO, 2013).

### **2.6.3 Authentic learning through participation in community projects**

Participation in local community projects is one way of bringing the abstract and often-confusing concepts of ESD closer to home and results in an increased commitment and sense of responsibility among communities (Læssøe, 2009). Noguchi (2011) also advocates for the involvement of local communities for a more “complete” form of ESD. He is of the opinion that ESD needs to go beyond the existing educational framework, which is based mainly on the transmission of knowledge to focus more on informal learning opportunities as well. In Japan, this approach has resulted in two large community-based projects: the “Asia Good ESD Practice Project (AGEPP)”, which entailed 34 community projects across Asia, and the “ESDxBiodiversity Project”, which involved nine Japanese community projects. One of these projects is an example of how learners can be involved in community projects: in said project, high school learners were mobilised to help recover a local “Satoyama” (community forest) environment. Local high school teachers and community members started a volunteer programme through which learners could learn traditional forest management practices. The learners reported an increase in self-esteem resulting from being part of the community through these volunteer activities. The project has since been opened to all local residents as part of a lifelong learning course offered by the education board of the municipality (Noguchi, 2011). A large-scale Scandinavian project (MUVIN) also involved 100 schools, 300 educators and 3 000 learners during a period of four years (1991–1995). It focused on the action competence of EE and yielded positive feedback from learners. Most learners agreed that they enjoyed working with real-life problems that involved people outside of the school. Another positive was that they acquired new knowledge and insights that were useful and meaningful to their lives. Such an initiative in Gauteng, South Africa, is the *Bontle ke Botho* (BKB) Clean and Green campaign, which involves schools, community wards and municipalities to prioritise actions that will improve their local environment (Ramsurap, 2013).

#### **2.6.4 An interdisciplinary approach**

The complex nature of the challenges of ESD needs an interdisciplinary approach. The US National report (as cited in Læssoe, 2009) summarises this viewpoint as follows:

The most likely route to empowerment – and to a range of other positive outcomes, including enhanced academic achievement and pro-environmental behaviour – appears to be sustained participation in complex environmental projects that cut across disciplinary lines.

In the USA, programmes such as “Investigating Environmental Education Issues and Actions” (IEEIA) and “Environment-Based Education” (EBE) use interdisciplinary, collaborative, student-centred pedagogies. Environmental topics are used to integrate teaching across multiple learning contexts. Teachers from various disciplines coordinate their teaching so that learners repeatedly come across the same complex problem, viewed from different disciplinary angles. The positive results from this approach have been remarkably consistent (Læssoe, 2009). In Sweden, a pilot scheme on cutting-edge education involves the Global College in Stockholm where learners are allowed to attend courses in higher education institutes. At the Global College, learners then work on interdisciplinary projects that focus on global issues, such as using research to generate creative city planning proposals, on which they receive feedback by experts. Learners use this knowledge and experience to develop individual citizen proposals that are submitted to relevant authorities (Östman & Östman, 2013). In Cape Town, South Africa, Rallim Preparatory and Secondary School is an example of a school that provides an education that is defined by “experiences of depth and not of coverage; an education that augments traditional classifications of instruction through interdisciplinary learning and blended approaches with a strong technological bias” (ralim.org.za., para 3).

#### **2.6.5 ESD as foundational principle**

In the Berlin Declaration on Education for Sustainable Development, delegates signed a commitment in May 2021 during the online World Conference on Education for Sustainable Development, organised by UNESCO in cooperation with the Federal Ministry of Education and Research of Germany, which included point number 1(a):

Ensure that ESD is a foundational element of our education systems at all levels, with environmental and climate action as a core curriculum component, while maintaining a holistic perspective on ESD that

recognizes the interrelatedness of all dimensions of sustainable development. (UNESCO, 2021)

This commitment to ESD as foundational principle is yet to be seen in practice in most countries around the world. The Inuit territory of Nunavut, Canada, however, is an example of how education can be reoriented on a philosophy that is consistent with ESD without labelling it as such (Læssøe, 2009). Here, sustainability is a core value in which education is seen as a circling ladder of progression that aims at developing adaptable lifelong learners. The curriculum of these schools is built around four strands that offer interdisciplinarity and integration of the traditional school subjects as explained in the previous section, the difference being that the approach is based on strong traditional values and a way of living that leads to sustainability (Læssøe, 2009).

#### **2.6.6 ESD as extracurricular activity**

Other than incorporating ESD concepts into certain subjects, this seems to be the “easiest” and most popular approach to implement ESD in schools. Unfortunately, because of the long and successful tradition of EE, it seems as if EE is still dominant in these extracurricular activities and not the more encompassing ideas of ESD. These projects and activities are also primarily driven by NGOs and organisations outside of the school community that are concerned with conservation – for example, the environmental clubs in Rosta Rica that have been active since 1995 before the Decade of Education for Sustainable Development even started (UNESCO, 2013). In Morocco, one of the ways that ESD was introduced was also through the formation of clubs with ESD content (UNESCO, 2013); in South Africa, the Land Service movement is a club system that has been effective for 108 years. It is an environment-oriented youth movement that aims to improve the love and protection of the environment and natural resources (<https://landsdiens.co.za/>). The Kids in Parks programme is an ad-hoc programme in which children from disadvantaged backgrounds and their teachers visit one of the national parks for three days to learn about their cultural and natural heritage (Ramsurap, 2013).

#### **2.6.7 The whole-school approach to ESD**

From an ESD perspective, this approach is definitely the one to strive for. Countries with successful ESD initiatives seem able to make this work to a certain extent, but because of the complete paradigm shift necessary, it is also the most difficult approach and one that cannot fully succeed without the support of government authorities and the broader community. An example of this is the Australian Sustainable Schools Initiative (AUSSI) – the flagship initiative for ESD in Australian schools (Læssøe, 2009). AUSSI partners support

schools with ideas for projects, curriculum support, auditing tools and involvement of the broader community. Other experiments with the whole-school approach are also mentioned in the national reports of the USA, South Korea, Denmark, and the UK.

In Sweden, the Sustainable Schools Award is awarded annually by the National Agency for Education after evaluating schools on whether their leadership and teaching approaches develop and promote ESD. This award encourages schools to take a whole-school approach (Östman & Östman, 2013).

As can be seen, a cornerstone of the whole-school approach is an action orientation of learning. Learners are not given solutions to problems but are encouraged and supported in their efforts to solve problems themselves. The challenge in embracing a whole-school approach is to ensure that the practical component of ESD does not become purely technical but continues to form part of a pedagogy that develops the ability of learners to think about interdependency and a consideration of their impact on the world in which they live. This approach to ESD is always a multistakeholder endeavour (Clayson, 2013).

Environmental secondary schools such as CEUNA in Heredia, Costa Rica, which fully embraced ESD paradigms and made widely use of the Earth Charter, are, unfortunately, despite their valuable contribution, no longer actively promoted and supported by educational policy. Education authorities prefer to rather focus on the Ecological Blue Banner Programme for Schools (EBBPS), which focuses on specific sustainable development policies (Brenes, 2013). Still, despite the reluctance of educational authorities to prioritise the whole-school approach, global organisations such as the Eco-Schools, operated by the Foundation for Environmental Education, have for 25 years continued to pave the way for sustainable schools worldwide. They are active in 72 countries, with 59 000 Eco-Schools to their credit. Their success is in the fact that they produce generation after generation of sustainably minded, environmentally conscious people who continue teaching the habits they have learnt (Ecoschools, 2022).

The above-mentioned examples show that it is possible to approach ESD not only as an add-on to an already overcrowded curriculum, or extramural programme, but as a new and exciting way forward for education.

## 2.7 EVALUATING ESD OUTCOMES

Choosing the correct pedagogies for ESD, knowing which competencies are needed to empower learners, and measuring whether one's ESD programme is successful, would be impossible without effective evaluation. Unfortunately, it seems as if there is little consensus on what to evaluate in ESD, neither are there standardised criteria or methods to compare values across scales, which means that there is not much evidence to show whether the efforts of the past 23 years have been effective (Kioupi & Voulvoulis, 2019). In this section, a chronological summary of the development or lack thereof in ESD evaluation is provided.

There are two sides to assessing the effectiveness of ESD outcomes: monitoring and evaluation. Both have at their core the gathering of information, forming judgements about that information, and then taking action based on the results with the aim of improving performance (Analytics in Action, 2020). Both monitoring and evaluation should be done effectively to properly measure the progress on the road to sustainability. In the case of ESD in South Africa, monitoring should preferably be overseen by the national DOE and implemented by the provincial departments to ensure local context. The purpose of monitoring is to help implement plans effectively, to place emphasis on making sure resources are delivered on time, and to budget, with the main priority being assessing whether things are done right. Monitoring is usually done by members of the project team and may be in the form of project update reports, meetings, quarterly reviews, time sheets and expenditure reports and is aimed at helping the project team to implement their plans more effectively (Analytics in Action, 2020). With regard to this, Ramsurap (2013:76), in the last report on *National Journeys towards Education for Sustainable Development*, commented that despite numerous efforts and initiatives, "there is a need for establishing a comprehensive national monitoring system of ESD practices that can monitor progress, gaps and quality of ESD implementation". Ramsurap (2013:76) also commented on the fact that the lack of a national ESD strategy created "numerous monitoring difficulties" and that there should be more focus on the "development and use of ESD monitoring tools". No evidence could be found that this aspect has improved since the report in 2013, and it still seems to be a weakness in ESD in the South African education system.

This lack of monitoring is, however, not only a problem in the South African context. In the same report, Brenes (2013) commented on the lack of educational research in Costa Rica on the effectiveness of the diverse EE and ESD programmes. In fact, most ESD initiatives in the country functioned independently from one another, thus there was no holistic view on the

impact they had. In Morocco, even though there were considerable efforts by the Ministry of Education to accelerate the implementation of reform in the educational sector, UNESCO (2013) reported that monitoring and evaluation tools to measure the progress of ESD were still lacking. Even in Sweden, where ESD seems well-developed, supported by and anchored within the education system, it is difficult to assess whether ESD initiatives have been relevant so far. It seems as if, at the time of the report, there were no reference points, clear demands for follow-up results or continuous assessment tools that had been formulated by the relevant authorities at the national level of the formal education system (UNESCO, 2013). These trends suggest that educational authorities have few credible methods to monitor and report the relevance, effectiveness and efficiency of the ESD initiatives in their respective countries and that the efforts for reform are mostly left to chance and individual efforts.

Even though there is often an overlap between the data collected in monitoring and the data needed for evaluation, the difference lies in how that information is used and what decisions are made because of it (Analytics in Action, 2020). Evaluation for teaching and learning is defined by Linn (2012) as a systematic process of collecting, analysing and interpreting information to determine the extent to which pupils are achieving instructional objectives. Furthermore, Beeby (1977) adds that some form of judgement of value has to be made about the information that would lead to an action.

From these definitions, it can be seen that evaluation is:

- a continuous process
- systematic and planned collection of information
- the analysis and interpretation of that information
- a measuring instrument to determine whether learning objectives are met
- a method of adding a value to the learning outcome
- a starting point to the action that is needed to improve what was evaluated.

Unfortunately, in the field of ESD, like the monitoring process, standardised and effective evaluation still seems to be inadequate. Huckle (2009) believes that instead of being impartial and objective, the evaluation of ESD is very much influenced by the political views of the government of the day. At the same time that the United Kingdom was consulting Huckle to find indicators to measure the impact of ESD on learners' knowledge and awareness of SD, Tilbury and Janousek (2006:26) recommended that the potential of innovative indicators that could assist in assessing the quality of learning and the degree of social change had to be recognised. However, little progress was made in this regard, because, according to Ramsurap (2013), seven years later, the assessment procedures

were still very much neglected, even though much effort had since been put into the design of learning opportunities and the integration of ESD into the curriculum. Ramsurap suggested the use of portfolios as an evaluation tool that could show both the process and product of learning after identifying that the lack of innovative assessment practices was one of the weaknesses in South Africa's journey towards ESD.

Mochi (UNESCO MGIEP, 2017) had a slightly different approach when he recommended that there be less emphasis on evaluating the output or product of ESD and more emphasis on improving the inputs, such as curriculum development, training of teachers, and the development of proper teaching materials. This shows a resistance against the traditional method of evaluation by testing at the conclusion of a module. Mochi called for more autonomy for teachers in the teaching of ESD as a way of increasing confidence and an extending of the ESD curriculum. According to him, the focus on systemic accountability has the opposite effect. He argued that worthwhile and lifelong learning, as is the aim in ESD, can hardly be demonstrated by end-of-term evaluation and added that a long-term view of learning requires a radical review of the traditional ideas about the evidence of learning outcomes. In this regard, Mochi (UNESCO MGIEP, 2017) and Ramsurap (2013) agreed that new and innovative ideas about assessment are necessary.

In the Netherlands, Kopnina (2018:1279) supported the idea that evaluation should be approached from a different angle. Kopnina argued that it was unlikely that a teaching strategy such as class discussion could be accurately measured in "well-defined units such as graded competencies and quantifiable skills", as learners would probably only develop understanding of the more challenging aspects of SD after the knowledge has been acquired and processed, and learners' skills, attitudes and values have evolved further through continuous learning. Kopnina further emphasised the fact that this continuous learning cannot be restricted to the inside of the classroom. She supports the use of written assignments and class discussions as evaluation and suggested using grading criteria to lead learners to engaging in meaningful discussions, asking applicable questions and demonstrating insight and understanding of the concepts. She also advocated for the use of group projects that involve investigation of case studies which include reflection, as well as active involvement and participation.

Monitoring and evaluation was identified as a key strategy for implementing ESD by UNESCO (2011), and different types and stages of ESD evaluations were identified, including front-end evaluations, process evaluations, as well as outcome and impact

evaluations (Zint, 2011). As one of the proponents of a more ecocentric approach to ESD, Kopnina (2017), however, agrees with Huckle (2009) that these standardised scales, such as the EAATE, could be influenced by the development state and political inclinations of a country and, as such, might not be completely reliable evaluation tools.

In their recent work, Kioupi and Voulvoulis (2019) found that the assessment of ESD outcomes was the one component of ESD that was falling behind. They found that criteria and standards associated with the evaluation of ESD competencies, the collection of reliable data and the use of standardised procedures to compare values were still needed in ESD. As seen in section 2.2, one of the difficulties in evaluation criteria for ESD lies in the fact that there is no single commonly understood concept of ESD, which means that sustainability learning outcomes often lack clarity. As ESD has evolved, two distinct schools of thought have developed. The first approach has a more prescriptive mode, focused on the training of learners in how to live their lives more sustainably. This approach relies mainly on instructional pedagogies and the transfer of knowledge (Kioupi & Voulvoulis, 2019) and would, as a result, be easier to monitor and evaluate and thus be more favourable with autocratic political structures. The second approach to ESD is more reflective and seen as more transformative by its proponents. It tends to emphasise empowerment of learners to reach their own decisions and rely on values of participation, self-determination and critical thinking (McGregor, 2013). This approach would require completely different, innovative forms of assessment. Kioupi and Voulvoulis (2019) hypothesise that for assessment to be meaningful and comparative, a common conceptual understanding of what ESD aims to achieve is imperative.

Considering various communications about ESD, this common conceptual understanding of ESD is still a long way from being achieved. Huckle (an advocate for a socially critical approach to ESD) comments, in his proposal to the UK ESD community on the evaluation of ESD, on the fact that most participants who reviewed his recommendations were against the idea that knowledge, skills and values could be prescribed, taught and assessed. This was due to the “problematic and discursive nature of SD, issues of validity and reliability that surround testing, and the unwelcome impact of such testing on ESD” (Huckle, 2009:10). These participants preferred approaches such as action research, where the process is more important than content and learning takes precedence over teaching. However, when a decision was made about the proposed indicators for evaluation, government officials and members of the ESD community opted for approaches that were less likely to encourage exposure to critical ideas that “reveal the limitations of conventional forms of knowledge production” (Huckle, 2009:13).

In conclusion, the fact that there are still no internationally accepted, standardised methods of monitoring and evaluating ESD almost 22 years after ESD was launched as a concept shows that there is limited understanding of how successful the initiatives of the past decade have been. This, in turn, is also a limiting factor in the implementation of ESD in educational institutions and one of the barriers to sustainability outcomes in these institutions.

## **2.8 BARRIERS TO SUSTAINABILITY OUTCOMES IN EDUCATIONAL INSTITUTIONS**

As already discussed in the previous sections, the fact that sustainability as an educational task often has a varied or vague definition as well as the lack of effective monitoring and evaluation present barriers to sustainability outcomes in educational institutions. The limited empirical studies on the effectiveness of ESD add to this. According to Kioupi and Voulvoulis (2019) and Ramsurap (2013), the few studies that have been conducted on the educational practices of ESD concepts only highlight the inconsistencies and problems with curricular design and their limited impact on behavioural change of learners. However, this is only the tip of the iceberg when it comes to the barriers of sustainability outcomes. The following subsections briefly discuss other barriers.

### **2.8.1 Lack of leadership**

Even though there has been an increase in the levels of ESD awareness across all sectors in South Africa and successes to celebrate (e.g., the integration of ESD into educational policies and the coordination thereof with developmental priorities; a strong ESD community with various stakeholders; and the development of learning resources and educational processes that support ESD), these pockets of ESD excellence have remained just that – isolated pockets. Ramsurap (2013) and Kioupi and Voulvoulis (2019) ascribe this to a lack of leadership and national coordination strategies. This lack of national coordination has inhibited the implementation of ESD policies and the training (at a national level) of educators.

### **2.8.2 Teacher confidence**

The lack of sufficient teacher training and professional development in ESD seems to be a recurring theme (Hunter & Jordan, 2020; Læssøe, 2009; Lotz-Sisitka et al., 2017; Ramsurap, 2013; UNESCO MGIEP, 2017). Educators have limited qualifications for ESD and as a result, become hesitant deliverers of messages they might not understand or believe themselves. A study conducted by Hunter and Jordan (2020) showed that educators who did not feel confident in their ability to create change did not see themselves as political activists involved in system-level political and legal behaviours and would, consequently, not know

how to guide learners in how to become effective in addressing environmental issues. Educators are often overwhelmed by sustainability concepts and the misconceptions about the nature of ESD and therefore suffer from inertia (Ramsurap, 2013). In the Southern African Development Community (SADC), several initiatives such as “Sustainability Starts with Teachers” (SST) have been launched in response to this lack of training and support of teachers. This course focuses on teachers, and educators working at TVET institutions, and its aim is to empower them to bring about ESD changes in their programmes and institutions. The training programme was launched in 2019, and in its second year, it had reached 77 institutions within the SADC, with an added 300 participants joining the online course in 2021 (Lotz-Sisitka & Chikunda, 2021). This is a good sign for the future; however, it still leaves the roughly 444 900 teachers currently in the education system who are unqualified, unsure and unsupported as to how to implement ESD, which does not bode well for the foreseeable future of ESD. Unfortunately, training alone is not the answer either. Teacher confidence will only increase significantly enough to make a difference if the proper resources, support and time for experimentation are built into the curriculum (Læssoe, 2009). ESD is a matter of trial and error, so providing a margin of error would allow educators to experiment without fear of failure.

### **2.8.3 Subject divisions within schools**

In secondary schools, especially, the different subjects are taught as separate entities with little integration between them. ESD is supposed to develop one of its key skills, namely *systems thinking competence*, also referred to as holistic thinking (Huckle, n.d.), interdisciplinary collaboration (Kioupi & Voulvoulis, 2019) or connectivism (Wals, 2010). Latter skill involves perspectives from various stakeholders and entails the ability to know and examine the complex systems of the environment, economy and society, across local and global levels. This means that teaching should be structured in such a way that it allows for the use of various forms of knowledge and facilitates the ability to think in terms of contexts and interdependency (Læssoe, 2009). It is critical that all subjects are seen as equally important and that they contribute to a learning culture that values critical thinking, inquiry, understanding and tolerance (UNESCO MGIEP, 2017). Subjects such as science and technology should be incorporated instead of being separated and taught in knowledge silos. Only then would learners be able to participate in solving real-world problems. The current division of subjects, therefore, creates an important structural barrier to sustainability outcomes.

#### **2.8.4 Curriculum challenges**

The introduction of ESD into school curricula is often just an add-on to an already overcrowded curriculum, with little consideration for effective incorporation (Læssøe, 2009; UNESCO MGIEP, 2017). Where ESD is introduced as a separate subject, it is often given low priority because it is not a subject that is examined. Also, where ESD concepts are added into prescribed textbooks, the unalterable curriculum policies force educators to adhere to these prescribed texts without consideration for contextual factors such as poverty and diversity within communities, or the developmental phases and lived experiences of learners in different contexts (Lotz-Sisitka et al., 2019; UNESCO MGIEP, 2017). This means the rote learning of facts has little relevance to the lives of learners and thus no sustainability outcomes.

#### **2.8.5 A narrow focus on vocational qualifications**

An inability by educational administrators to reconceptualise the overall aims of education, instead of making superficial adjustments to the curriculum, is a major barrier to achieving sustainability outcomes (Læssøe, 2009). Most education systems prioritise the capacity of education to provide talent so as to promote the economic growth of the country (UNESCO MGIEP, 2017). Consequently, this human capital perspective with its focus on job-ready skills is incompatible with an approach to learning that values sustainability, peaceful co-existence and collaboration instead of the competitiveness that drives the pursuit of individual achievement. The competitiveness of the global market forces many countries to control the effectiveness of their educational outcomes by means of examinations and performance indicators. This hampers the implementation of ESD, which is seen as vague and idealistic and in conflict with more straightforward academic achievements that can be measured and compared internationally (Læssøe, 2009).

#### **2.8.6 Education is compliant with the aims of nation states**

Often, when an autocratic form of government or a strong sense of nationalism is present in a country, the capacity to foster autonomous, critical thinking in learners is restricted. Education becomes a conveyor belt for State-authorized knowledge, and patriotism or nationalism override the principle of peace for all and a consciousness of common humanity. Curricula in these cases do not acknowledge that the point of reference for a responsible citizen is not only the State, but that it extends beyond national or cultural boundaries. This patriotism is often seen in history textbooks that are one-sided and leave little space for critical interpretation of events (UNESCO MGIEP, 2017). In ESD, the focus is the greater

good of humanity and not only that of the nation state, and this should be reflected in educational policies.

These are some of the barriers that have been observed over the past 13 years and reported in research on ESD. The Decade of ESD (2005–2014) is long gone without the impact that was hoped for, and the aim has now shifted to 2030. Hopefully, the identified barriers will be addressed over the next eight years and education will contribute to creating a more just and sustainable world.

## **2.9 THE IMPORTANCE OF CONTEXT**

Even though the SDGs are a global framework, it helps to localise them in terms of educational outcomes, as this assists in the realisation of both community goals and global priorities (Kioupi & Voulvoulis, 2019). Sustainability issues are deeply tied to social, political, cultural and economic inequalities. Pashby et al. (2021) suggested that it is imperative that these issues are linked to historical and present-day colonial systems of power. It is thus important to understand that especially environmental issues are experienced differently in different contexts. Clayson (2013) agrees that participatory approaches to ESD are important to address different experiences and suggests that teachers, teacher trainers, researchers and various stakeholders, from the national level to the smallest communities, should be included to ensure success. Therefore, Læssøe et al. (2009) and the RCE network place a strong emphasis on community and regional projects.

It is important to guide learners towards personal connections by focusing on place. Place-based educational programmes can support learning, especially in the environmental sciences and geosciences, by linking scientific phenomena with personal experiences in places that are meaningful to learners. Littrell et al. (2020) further found that enabling learners to tell their own stories about something such as climate change through filmmaking and other digital media can significantly impact their science learning, engagement and development of environmental identities. This leads to greater confidence and interest in reducing climate change in their own communities.

Ramsurap (2013) confirmed the belief that context is crucial. She found that integrated programmes that linked to poverty eradication with community change were important and that analysis of contextual issues in ESD should be improved. She recommended that there was a need to support the recontextualisation of policy in practice in different fields, such as the different communities in which teachers work.

Yamaguchi (Vaughter et al. 2022) stated that ecologically, the world is in the midst of what experts call the sixth extinction, which involves the rapid loss of an astonishing array of life forms. Although this is a global phenomenon, it is driven by patterns of development at the local level, as each community has its own ecology and developmental needs. Solutions to these challenges, therefore, often lie within local communities, and education is the first step to finding solutions. Czippan (Vaughter et al. 2022) supports Yamaguchi's view when he says that human-driven environmental challenges – which include biodiversity loss, climate change and resource overconsumption – are all interrelated and share a common cause – the human–nature disconnect. According to him, the only way to address these challenges is for humans to reconnect with nature in the place where they belong and live to be reminded of these connections. The recent Dasgupta Review (Dasgupta, 2021) emphasised the need to transform financial and educational systems to enable the transformative changes that are urgently needed to sustain them, the whole of humanity and the biosphere. It is, therefore, vital to establish environmental education programmes that have a tangible impact – and what better way to do it than within the context of a local community where the impact can be experienced first-hand.

Based on these observations, it is clear why ESD as a concept is often viewed as vague and confusing. This is why it is so important that teachers are empowered with knowledge and skills to discuss and explore with and guide their learners with confidence to find solutions and better ways to live, which would be to the benefit of their own communities.

As the current study focused on Eastern Cape secondary schools, the next section discusses the context under investigation.

## **2.10 SUSTAINABILITY ISSUES IN THE EASTERN CAPE PROVINCE**

The Eastern Cape is the second-largest province in South Africa, with a population that makes up approximately 12.7% of the total national population (Eastern Cape, 2016). It is ranked as the poorest province in the country, which can be ascribed, in part, to the fact that the former homeland areas of the Transkei and Ciskei were incorporated into the province after the end of Apartheid. These areas were historically neglected when it came to development (Eastern Cape, 2011). The issue of poverty can also be seen in the distribution of schools. The Eastern Cape comprises 95% quintile one to three schools, which are regarded as “no-fee schools” (Ramsurap, 2013). The Eastern Cape Vision 2030 Provincial Development Plan (Eastern Cape planning commission, 2014:12) summarises the legacy of this history as follows:

The cumulative effects of all this are manifest in among others two negative factors that feed into each other to worsen the condition of the majority dispossessed and poor: The first is a psycho-social, cultural and spiritual alienation as well as identity crisis that is the inevitable consequence of dispossession and disempowerment – a loss of knowledge of self, as well as loss of the means to generate and ensure self-sustenance. The second, is material poverty and deprivation that deepens the condition of powerlessness and alienation. Our core challenge therefore is to restore our human condition through confronting these impediments to a dignified human existence.

When Apartheid ended in 1994, farming activities in the rural parts of the Eastern Cape changed from a predominance of stock farming to game farming and eco-tourism, which, in turn, led to rapid urban growth. As a result, many small land holdings were merged into larger game farms, which led to the displacement of farmworkers who relocated to urban settlements where there were already high levels of unemployment. This problem of poverty has now been exacerbated by the recent Covid-19 pandemic and resulting slow-down in economic activity (rcenetwork.org). The province is known for its extreme levels of poverty and unequal development. The province has established subsistence agriculture practices, which support approximately 3.7 million people living in rural households. The government gives minimal support to these informal or subsistence farmers (Coastal and Environmental Services, 2011). Current threats to biodiversity in the Eastern Cape – including alien vegetation, pollution, erosion and land-use management challenges, as well as reduced yearly rainfall, occasional flooding, inland and coastal storms, strong winds, and increasing temperatures due to climate change – add to the challenges of farmers and rural inhabitants of the province (Republic of S.A., 2004)

Other challenges include water-related issues, such as droughts, which cause declining water quality; over-abstraction, which negatively affects down-stream water quantity, quality and ecological balance; the eutrophication of water resources; maintenance issues such as sewage contamination from noncompliant sewage works; and fertiliser and pesticide pollution of available water sources (Eastern Cape, 2011). The Eastern Cape Vision 2030 Provincial Development Plan (Eastern Cape planning commission, 2014:6–8) identified the following challenges:

- too few people work
- the standard of education for many Black learners is poor
- infrastructure is poorly located, undermaintained and insufficient to foster higher growth and spatial transformation
- spatial patterns exclude the poor from development

- the economy is overly and unsustainably resource intensive
- a widespread disease burden is compounded by a failing public health system
- public services are uneven and often of poor quality
- corruption is widespread
- South Africa remains a divided society.

The Eastern Cape Vision 2030 Provincial Development Plan (2014) is a detailed plan that describes a vision of a sustainable and flourishing province by 2030. In the light of this and the fact that eight of the 16 years have already gone by without significant changes, it is important to look at the role of education and especially ESD in this vision for 2030.

## **2.11 CONCLUSION**

The literature review has shown that the nature of ESD is still contested, as there is no single clear definition as to what ESD means. Therefore, the role of ESD is contentious as well, especially when it comes to whether the focus should be on the transmission of knowledge or the transformation of habits. Literature shows that there are a wide variety of competencies that learners should acquire in order to become lifelong learners who are empowered, engaged and skilled citizens who are capable of living sustainably. Certain pedagogies and teaching techniques are more capable than others to help learners acquire these sustainability competencies. Most of these pedagogies veer away from the traditional educator–learner relationship and treat them both as partners in change.

Unfortunately, in addition to the above, there is no uniform approach to ESD in educational institutions either. These discrepancies lead to or are a result of various barriers to sustainability outcomes in educational institutions. A more focused approach to the evaluation and monitoring of ESD outcomes could be a solution to overcome these barriers that limit the effectiveness of ESD. The contextual differences between countries, and even different areas within a country, also contribute to the difficulties of implementing ESD effectively and should always be taken into consideration when devising an ESD strategy.

The next chapter discusses the research design and methodology that were selected for this study.

## **CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY**

### **3.1 INTRODUCTION**

The research design and methodology of a study can be seen as the blueprint of the plan regarding the procedures and methods that are to be followed in conducting the anticipated research (Creswell, 2009). This gives the researcher certain tools to gather data on social realities from individuals, groups, visual media, texts, social media and the Internet and it is, therefore, essential to find a tight fit between the purpose of the research and the method (Nieuwenhuis, 2020). The choice of methods is indicative of how the researcher sees the world and thus of the ontological and epistemological position of the researcher. Hesse-Bieber and Leavy (2011) use the analogy of a bridge to describe how methodology connects the philosophical standpoint and method of research. They emphasise that the researcher travels this bridge many times throughout the research process and claim that methodology serves as a strategic, yet malleable guide.

This comparative study relied on a qualitative research design and document analysis as research method. According to Esser and Vliegthart (2017), comparative research tries to understand and create awareness. Furthermore, it prevents relativisation and provides access to alternative solutions. The above-mentioned authors also add that comparative analysis provides explanatory relevance of the contextual environment.

### **3.2 RESEARCH DESIGN**

Qualitative research is distinguished from quantitative research in that it relies on linguistic rather than numerical data and utilises meaning-based rather than statistical forms of data analysis (Nieuwenhuis, 2020), which promotes the understanding of social life through the study of targeted populations or places (Crossman, 2020). This type of research yields descriptive data that the researcher must interpret, applying meticulous and systematic methods of transcribing and coding. Thereafter, trends and themes are analysed. This is important because in qualitative research, the researcher tries to investigate the importance of contemporary issues (Hammersley, 2013).

As this research followed the evolved grounded theory approach, the more systematic, analytical procedures of Strauss and Corbin (1998) were used to collect data. Saturation of categories is accentuated in this approach; a *category* represents a “unit of information

composed of events, happenings and instances” (Nieuwenhuis, 2020:88). The above-mentioned method was suitable for this study, as the collection and analysis of data from the available documents were an integrated and iterative process.

In this comparative study, data were collected, analysed and interpreted by means of document analysis. The documents on the implementation of ESD in Eastern Cape public and private secondary schools were studied in order to find similarities and differences between them. The aim was to analyse and interpret the documents to develop theory and best practices that could serve as guidelines to other secondary schools in South Africa.

George and Bennet (2005) coined the term “building block studies”, which refers to the study of particular types or subtypes of a phenomenon. ESD as a phenomenon is so large that it has to be categorised into distinct parts or subtypes. For the purposes of this study, common patterns of the implementation of ESD in Eastern Cape secondary schools were studied so that each block of knowledge would contribute to the larger theory of ESD as a phenomenon. George and Bennet pointed out that the component provided by each building block is in itself a contribution to theory, even though its scope is limited.

According to Esser and Vliegthart (2017), mono-national studies can contribute to comparative research if they are formulated with a larger framework in mind and follow the method of structured, focused comparison suggested by George and Bennet (2004). The method is “structured” in that a researcher uses general questions that are asked of each of the cases under study with the aim of guiding and standardising data collection. These questions reflect the research objectives and make systematic comparison of the findings possible. Moreover, the method is “focused” in that it only deals with certain aspects of the case under study (George & Bennet, 2004). Esser and Vliegthart (2017:5) add that even isolated, single-country studies can carry universal significance if they are directed as an “implicit” comparison. An implicit comparison needs to be embedded in a comparative context, and the analytical tools should be taken from comparative literature. The case selection has to be justified as either representative, prototypical, exemplary, deviant or a critical case. In this study, the selection of secondary schools under study was prototypical, as it has potential to serve as example of what could be done in at this level of education in terms of ESD.

### **3.3 RESEARCH PARADIGM**

Nieuwenhuis (2020:57) argues that a researcher’s choice of research method shows something about their perspective of reality and, thus, also their ontological and

epistemological position. What, then, is reality for the researcher? Reality is only understandable through the human mind and through ideas that have been socially constructed. These meanings are formed using the interpretivist paradigm, which implies that it will be the lens, or organising principle, through which reality will be interpreted. Schwartz and Ogilvy (1979:v, 28) subscribe to this view by stating that a paradigm is associated with the figurative lenses through which a researcher sees everything – in other words, the entire belief system or map of reality. These lenses then enable researchers to tell a meaningful story by depicting a world that is functional and purposeful but still subjective.

Interpretivists understand that reality is not objectively determined but socially constructed. A researcher should consider the biased perceptions of human beings and their diverse interpretations of the world as the starting point in understanding social phenomena (Kelliher, 2005:1). When people are studied in their social contexts, there is a greater chance of understanding their perceptions of their own activities. This research paradigm is also concerned with the uniqueness of a particular situation – in this case, the unique nature of the implementation of ESD in each school in its own context, which contributed to the underlying pursuit of contextual depth or the larger expression of what ESD should look like. Wolhuter et al. (2017) echo the importance of this context when they urge researchers to fully consider the contextual similarities and differences between foreign and the own education systems in order to assess the suitability of a foreign educational practice for one's own situation, and contrariwise. The parts should be studied to understand the whole, but the researcher also has to understand the whole in order to interpret the parts. Kivunja and Kuyini (2017) further clarify that the main assumption of the interpretivist paradigm is that reality is socially constructed; hence, it is sometimes called the constructivist paradigm. In this paradigm, theory does not precede research, but as with the grounded theory approach used in this study, it follows it, which grounds it in the data generated in the research process.

### **3.4 RESEARCH METHODOLOGY AND THEORETICAL FRAMEWORK**

#### **3.4.1 Grounded theory**

Studies that apply the grounded theory approach aim towards conceptual thinking and theory building rather than the empirical testing of a theory (Khan, 2014). Theory building is crucial because it contributes to the structure for analysis, assists in the efficient advancement of the field and is necessary for solving real-world problems. Theory building research endeavours to find similarities across different spheres to define the variables and specify the sphere to build internally logical relationships and make definitive predictions (Walker, 1998). Theory

building is inherently a qualitative process using inductive, constructivist methods. This inductive reasoning seeks to identify a valid principle and to construct generalisations, relationships and eventually theories by evaluating the data collected for this purpose (Khan, 2014). Khan (2014) further explained that even though the researcher, using the inductive process, might still have some pre-existing interpretations or theories when approaching the problem, they will not seek to approve or invalidate the existing theories but will rather seek to create outlines, consistencies and significances by collecting data.

It is with this in mind that grounded theory was selected for this research. Classic grounded theory was initiated by Glaser and Strauss in 1976 as a systematic method of qualitative analysis in sociology. It is a very distinct method; however, many of its strategies have seeped into the larger field of qualitative research. Consequently, it has been developed further into separate versions by Clark (2005), Charmaz (2014) and Corbin and Strauss (2015), among others.

In a classic grounded theory study, as developed by Glaser and Strauss, the background, research problem, literature review and research questions should be very general in nature, as the researcher should not enter the study with biases or preconceived ideas. It is a method of discovery that uses methods of research revolving around the perspectives of the participants in the sample group. These perspectives are collected through open-ended questions that evolve as the theory starts to emerge (Nathaniel, 2020).

Strauss and Corbin, in contrast, suggested a detailed outline of analysis that emphasises continuous validation and a combination of inductive and deductive methods. The earlier versions of Strauss and Corbin's grounded theory have objectivist underpinnings; nevertheless, the recent editions promote the more reflexive role of the researcher, which lessens the application of the technical analysis (Timonen et al., 2018).

Charmaz's constructivist grounded theory emphasises the roles of both the researcher and participants in generating knowledge, and the process of interrogating the nature of the knowledge generated is an important starting point (Charmaz, 2017). Timonen et al. (2018), however, argued that the subjectivity inherent in the method of knowledge as an interpretative portrayal in this version could be at odds with more traditional trends in research that emphasise the importance of generating objective research findings.

Having reviewed each of the three main trends in grounded theory, it is clear that the key assumption of grounded theory is to remain open to representations of the world as it is encountered in the research and not to force data into theoretical accounts (Conlon et al.,

2018). This can be done while acknowledging existing theories – an idea that has guided evolved grounded theory away from the classic model. Thus, the evolved grounded theory model seemed to be the most appropriate model to use in this research, as it acknowledged what has been done before in the quest to understand ESD, but it also allowed the researcher to remain open to new findings in the field that could have led to the outlines, consistencies and significances that build new theories.

Corbin and Strauss (1990) recommended the following criteria for a successful grounded-theory study:

- The data collection and analysis should be interrelated processes, with analysis starting as soon as the first data have been collected.
- The theorist should work with the conceptualisation of data, not the actual data as is, because theories cannot be built using raw data.
- Concepts discovered in the data should be developed and grouped to form categories, which should then be investigated further to find the frequency, conditions, consequences, etc., that will define and give explanatory power to the categories.
- Sampling in grounded theory should proceed in terms of concepts, their properties, dimensions and variations and how they relate to the phenomenon under study.
- Constant comparisons should be used between incidences to help achieve greater precision and consistency.
- All patterns and variations on patterns should be accounted for to order the data and assist with integration.
- Process, whether it means breaking the phenomenon down into stages, phases or steps, or purposeful action, even if it is not progressive, should be built into the theory.
- The writing of theoretical memos is an integral part of doing grounded-theory research and should begin at the very first coding session and continue to the end of the research.
- Hypotheses about the relationships among categories should be revised constantly during the research process until they hold true for all the evidence collected.
- Analysis of a setting should not be restricted to what is immediately apparent but should take into account broader structural conditions.

### **3.5 DATA COLLECTION**

In this study, the focus was on using documents as data-gathering technique. All types of written communication, whether printed or electronic, were investigated, to explore if they could shed light on the phenomenon under investigation. Primary sources of data – such as policies, mission statements, newsletters, reports, posts on websites and social media of the schools involved – were the first sources of information, but secondary sources – such as newspaper reports – were also used. Nieuwenhuis (2020) lists the following criteria when choosing documents to be included in one's study:

- make sure of the type of document that is being dealt with
- find the publication date
- assess if the information is based on empirical data, or whether it is anecdotal or based on opinion
- consider the context, purpose and intent of the document
- identify the main points or arguments that are put forward and how they relate to the research
- determine what research methodology was used in an empirical document.

With the above-mentioned criteria in mind, a careful selection of documents was made pertaining to ESD at secondary-school level in the province under investigation. These comprised school policies, departmental policies, communication by the ECDOE, previous research, scholarly articles, newspaper articles, newsletters, websites and social media accounts of secondary schools, and any other documentation relevant to the study.

#### **3.5.1 Sampling technique**

Qualitative research commonly makes use of purposive sampling. As the name suggests, a selection of sources is made so as “to represent a phenomenon, group, incident, location or type in relation to a key criterion” (Nieuwenhuis, 2020:93). In this study, theoretical purposive sampling was used as the most appropriate method for the research based on the grounded theory framework (Strauss & Corbin, 1998). As stated earlier, the researcher sampled the websites, newsletters and other appropriate written documentation of Eastern Cape secondary schools (both public and private) as well as those of the ECDOE based on their potential to address the research questions and thus make a contribution to the development of the theoretical construct around the implementation of ESD in secondary schools. George and Bennet (2004) emphasised that a well-defined research objective, together with an appropriate research strategy to achieve the objective, is needed to guide the selection of

cases on the phenomenon under investigation. Therefore, the following steps, recommended by Nieuwenhuis (2020), were taken:

- a) the sample was selected to answer the main research question and subquestions;
- b) the sample had to provide rich and relevant information on the phenomenon under investigation;
- c) the sample had to be credible in both description and explanation.

### **3.5.2 Sampling sites and sample size**

Concerning the sample size, the aim was to start with a large sample to locate a minimum of four to five private and four to five public secondary schools that had implemented ESD in their curriculum and/or extramural activities. The Eastern Cape has around 1 098 registered private schools and 6 000 public schools (ECDOE). All South African public schools are classified into one of five quintiles with the aim of allocating financial resources. Quintile one is considered as the “poorest” quintile, while quintile five is seen as the “least poor”. The poverty rankings are decided at a national level according to the poverty of the community surrounding the school as well as certain infrastructural factors (Grant, 2013).

At first, an attempt was made to find a public school representing each of these quintiles, but the researcher later realised that using quintile 4 and 5 schools, where parents subsidised part of the school’s income, would make the public schools more comparable to the private schools than using low-income public schools compared to affluent private schools. In case of the private schools, the aim was to find schools that represented both religious and commercially funded private schools. The contextual differences between public and private secondary schools based on school fees charged, the teaching philosophy, the curriculum and the customer base of the school added further depth to the study. Most of these schools have a school website, social media accounts or newspaper articles reporting on their ESD activities.

After reviewing a large sample of Eastern Cape public and private schools, only schools that had relevant documentation on SD and/or ESD were included in the study. Effort was made to have an equal representation of public and private schools. The selected documents were assigned specific identifiers according to whether they were from private commercial (Pr1E(C)-Doc1), private religious (Pr2D(R)-Doc1) (type of school indicated in brackets) schools or from public schools with the quintile of the school indicated in brackets (Pu1E(5)-Doc1). Effort was made to study schools that were English-, Afrikaans- and double-medium (i.e., using two languages as language of teaching and learning on an equal basis).

Employing identifiers assured the anonymity of the schools under investigation, thus adhering to the ethical requirements applicable to this study (see table 4.3).

Before selecting the schools to be studied, the list of registered secondary and combined schools on the ECDOE website was used and separate lists were made of private and public schools. The public schools were then divided further according to their quintile, and the private schools were categorised according to whether they were religious or commercial schools. Thereafter, schools were sifted according to whether they had websites and social media accounts which could be used to gather data. Websites and social media accounts were scoured for anything that could be linked to ESD, such as:

- a) mention of SD in policies, vision and mission statements;
- b) use of sustainability terminology, such as ecologically correct, socially fair, economically viable, sensitive to local culture or ESD terms relating to competencies;
- c) use of pedagogies that challenge attitudes and develop SD competencies and skills, such as:
  - use of technology
  - a student-centred approach
  - development of globally competent citizens
  - real-life problem-solving.
- d) extension and extramural activities aimed at sustainability outcomes;
- e) adopting sustainability principles;
- f) community engagement;
- g) activities indicating issues such as poverty relief, citizenship, peace, ethical behaviour, responsibility, democracy, justice, human rights, and gender equality;
- h) the implementation of sustainability principles on the school grounds.

All information found was included in a data-collection document. The final schools were purposively selected based on the richness of the data they yielded to address the research questions, always keeping in mind the above-listed criteria.

### **3.6 DATA SATURATION AND ANALYSIS**

While selecting, evaluating and synthesising the documents, they were also analysed. In qualitative research, data analysis can be ongoing, which involves reflection, asking analytical questions and making notes (Creswell, 2009). As indicated by Labuschagne (2003), document analysis produces data – excerpts, quotations, or even entire passages – that are then tabulated into major themes, categories and case examples through content analysis. Bowen (2009:23) supports this view and described content analysis as the practice

of organising information into categories related to the research questions. In line with grounded theory, the data analysis process included open axial and selective coding. In grounded theory research, data collection and theory generation are deliberately fused so that initial data analysis can be used to guide continuing data collection. This, in turn, should lead to the saturation of recurring categories as well as the opportunity to follow up on unexpected findings (Glaser & Strauss, 1976, as cited in Nieuwenhuis, 2020). As a first step, the textual data were broken up into discrete parts (open coding), after which connections were drawn up (axial coding). The last step involved selective coding where two central categories, also known as themes, were identified to capture the central phenomenon of the research (Corbin & Strauss, 1990).

### **3.7 TRUSTWORTHINESS AND CREDIBILITY**

Qualitative research differs from quantitative research in that it does not test theory, nor is it outcome-oriented; rather, it is concerned with the meaning-making of phenomena. The attention is on the social background against which events occur and have meaning and the researcher tries to understand the social world from the perspective of the participants or reported information within the documents. The trustworthiness and credibility of qualitative data thus depend greatly on the methodological skill and sensitivity of the researcher. Content analysis requires more than just reading to see what is there – credibility centres around identification and documentation of recurrent, accurate, homogeneous or heterogeneous features as patterns, themes and worldviews (Labuschagne, 2003). In the case of this study, transparency in reporting each step of the research process – including authentic description of each step undertaken during data collection and data analysis – ensured credibility.

Morse's (1999) viewpoint that science in its essence, whether it be quantitative or qualitative, should be a thorough process that pays attention to detail was taken into account in this qualitative study to avoid criticism with regard to validity and reliability. Tobin and Begley (2014) also suggested that qualitative researchers should place the concept of rigour within the epistemology of their work and make it more appropriate to their aims so as to ensure that their findings represent reality. These guidelines were kept in mind in this research, together with the early ideas on trustworthiness presented by Duffy (1987) and Lincoln and Guba (as cited in Tobin & Begley, 2004), among others. These researchers claimed that while triangulation holds the idea that a concept is two-dimensional, crystallisation – a new way of looking at a problem – proposes that concepts have many different angles. Crystallisation shifts the scientific idea that something is fixed towards the idea that concepts

are multidimensional with infinite varieties of shapes, substances and angles of approach (Tobin & Begley, 2004). This study followed the process of crystallisation to delve deeply into the mystery that is the implementation of ESD, with the expectation that the discovery would be rich, credible and trustworthy. Similarly, the grounded theory approach that was used as the theoretical basis of this research aims at increasing the “density” and “saturation” of recurring categories (Glaser & Strauss, 1967, as cited in Nieuwenhuis, 2020). In this study, the focus was on how effectively ESD had been implemented in Eastern Cape secondary schools (both private and public schools) at the time of this study. This topic was studied from various angles, using a variety of written sources, to identify effective practices as well as challenges in the implementation of ESD in secondary schools.

### **3.8 ETHICAL CONSIDERATIONS**

Document analysis was employed in this study. Documentary research offers a means of promoting methodological pluralism, which is appropriate for research in a field as diverse as education (McCulloch, 2012). All resources used were sourced from documents that are freely available in the public domain, none of which contained confidential information, risks or were a contravention of security requirements. McCulloch (2011) warns, though, ethical considerations are often overlooked when conducting documentary research, as there is little or no direct interaction with those being researched. Ethical issues may arise when a school, educator, or educational institution is named in the research. Legal issues should also be kept in mind as the laws of copyright, freedom of information and data protection are highly relevant to documentary research.

It was with the above in mind that the selected documents were acknowledged by using specific identifiers (see table 4.3) to avoid identification of the schools under investigation.

### **3.9 CONTRIBUTION OF THE STUDY**

The aim of this study was to make a contribution to the field of comparative and international education on the subject of ESD in secondary schools. This study also contributes to theory as part of what George and Bennett calls “building block studies”, where particular types or subtypes of a phenomenon are studied. In the case of this study, the implementation of ESD in private and public secondary schools in the context of the Eastern Cape province provided a building block in the much larger picture of ESD as a phenomenon. Through the findings and emergence of a theory grounded in the data, several examples of exemplary practices and strategies are provided. This has the potential to assist SGBs and SMTs to implement

ESD successfully in their secondary schools. This may also contribute to the fulfilment of the 17 SDGs, consequently leading to a society that can function more sustainably.

## **CHAPTER 4: DATA ANALYSIS AND FINDINGS**

### **4.1 INTRODUCTION**

The collection and analysis of data were treated as a continuous, iterative process, with the aim of achieving data saturation (Nieuwenhuis, 2020). The process was followed to collect data; to reflect upon the data; to identify the shortcomings of the data; and to take steps to fill in gaps or gather more data. Considering the posed research questions and objectives of the study, the process was repeated until no more new perspectives or ideas were forthcoming.

### **4.2 DATA ANALYSIS**

Data analysis was done according to the principles of grounded theory, as developed by Corbin and Strauss (1990). Strauss (1987) cautioned that the focus in data analysis should not be on merely collecting or ordering a large amount of data but on organising the many ideas that emerge from the analysis, often sentence by sentence. Saldaña (2013) urges researchers to ponder, scrutinise, assess, organise, pattern, categorise, connect, integrate, synthesise, reflect, hypothesise, assert, conceptualise and abstract their data before even thinking of theorising.

Corbin and Strauss (1990) gave a detailed outline of data analysis that emphasises continuous validation and a combination of inductive and deductive methods. In this study, the data analysis was conducted following the principles as outlined by Corbin and Strauss (1990):

- a) Data collection and analysis were treated as interrelated processes.
- b) Concepts, not raw data, were used as the basic units of analysis.
- c) Categories that were related were developed.
- d) Sampling proceeded on theoretical grounds.
- e) Analysis involved constant comparisons.
- f) Patterns and variations were accounted for.
- g) Process was built into the theory.
- h) Writing theoretical memos was an integral part of the process.
- i) Hypotheses about relationships among categories were developed and verified as much as possible during the research process.
- j) Broader structural conditions were analysed as well.

#### **4.2.1 Method of analysis**

In this comparative study, data were collected, analysed and interpreted by means of document analysis. The documents on the implementation of ESD in Eastern Cape public and private secondary schools were studied in order to find similarities and differences between them. Through addressing the research questions, the aim was to develop theory and best practices that could serve as guidelines to other secondary schools in South Africa. The researcher sampled the websites, social media sites, newsletters and other appropriate written documentation of Eastern Cape private and public secondary schools as well as those of the ECDOE based on their potential to address the main research question and thus make a contribution to the development of the theoretical construct of the implementation of ESD in secondary schools.

#### **4.2.2 Coding process**

When a theorist starts the coding process, it is not done with the actual data but with conceptualisations of the data. This analysis is used to direct the next observations. Each concept discovered is seen as provisional until its repeated presence, or significant absence, earns its way into the theory (Corbin & Strauss, 1990). With this in mind, a detailed and methodical manual colour-coding analysis of the data was conducted to code the 77 documents that were selected for the purpose of the study.

The researcher initially categorised the data by means of open codes. Strauss (1987) suggested that the researcher tries to identify *in vivo* codes, or terms used by the cases being studied. These terms were assigned open codes which were then compared and grouped to form axial codes. Analytical memos were written throughout the process. Axial codes were then analysed to formulate selective codes. Tables 4.1 and 4.2 provide excerpts from the documents showcasing the coding process. The document presenting the detailed open-coding process and the document showing the detailed process of moving from open codes to axial codes are attached to this thesis as Annexures A and B, respectively. Figure 4.1 provides the visual representation of arriving at selective codes and reflects the final two themes. The coding process provided a method to organise the many ideas that emerged from the analysis of the data into meaningful concepts (Strauss, 1987). Theoretical memos were made next to the open coding column to track the researcher's observations and questions. After axial coding was done, the documents and codes were revisited and new ideas as well as connections were considered.

**Table 4.1: Excerpt of the coding process: Open coding for public schools**

Doc	Source	Actual Text	Open Coding	Analytical memo
Pu1E(5)Doc 1	Website: Vision & mission	<ol style="list-style-type: none"> <li>1. Strive to equip our learners with <b>LIFE SKILLS necessary to face challenges</b> both at school and <b>in the future</b>.</li> <li>2. Strongly promote RESPECT FOR AUTHORITY, THE RULE OF LAW and the ideal of <b>GOOD CITIZENSHIP</b> in order to <b>contribute to our Country's GROWTH and PROSPERITY</b>.</li> <li>3. Respect and promote <b>HUMAN DIGNITY and TOLERANCE in our DIVERSE DEMOCRATIC SOCIETY</b>.</li> </ol>	<p><b>Life skills</b></p> <p><b>Good citizenship</b></p> <p><b>Human dignity and tolerance</b></p> <p><b>Diverse democratic society</b></p>	<p>Four quintile 5 schools (schools that charge school fees) and one quintile 4 school were investigated. quintile 4 schools receive a Norms and Standards allocation of approximately R 803 per learner from the National Department of Basic Education. Quintile 5 schools receive R277 per learner. The shortfall for running the school effectively is supplemented by school fees. Quintile 1–3 schools are mostly in areas deemed to be poverty-stricken and do not charge school fees. They receive a Norms and Standards allocation of R1 602 per child. Some quintile 4 and 5 schools are, however, not necessarily in</p>
Pu3A(5)Doc1	Website: Welcome	<p>“Ons glo dat opvoeding nie net is om boekgeleerdheid te hê nie, maar om <b>kennis lief te hê</b> en lewenswysheid te ontwikkel”.</p> <p>Bou nie net vir vandag nie, vir die verbygaande tyd nie, maar <b>bou vir ewigheid</b>.</p>		

				<p>areas where all parents have an above-average income and struggle to make ends meet, with many parents applying for exemption of school fees, so budgets are tight and geared towards essentials. Unfortunately, very few quintiles 1–3 schools have websites or properly run social media accounts on which data could be found.</p> <p>None of the public schools specifically mentioned ESD or SD in their motto, vision or mission, but some sustainability terminology was used, such as:</p> <ul style="list-style-type: none"> <li>- future challenges</li> <li>- good citizenship</li> <li>- contribution to country's growth and prosperity</li> <li>- promoting human dignity and tolerance</li> <li>- lifelong learning</li> </ul>
Pu4E(5)Doc1	Website: Headmaster's message	(Public School 4) remains at the forefront of <b>innovative teaching</b> . For over 125 years we have not only continuously adapted to the changing environment, we have done so as leaders: <b>pro-actively embracing challenges</b> . We thrive on challenges, the greatest of which is the <b>holistic development</b> of our learners. <b>Our focus will never be on academic development solely, or on sport or cultural activities. It cannot be if we want to help each learner on the road to self-discovery and self-actualisation.</b>	<p><b>Love of knowledge/learning</b></p> <p><b>Building for future generations</b></p> <p><b>Innovative teaching</b></p> <p><b>Pro-actively embracing challenges</b></p> <p><b>Holistic development</b></p>	

				<ul style="list-style-type: none"><li>- building for the future</li><li>- innovative teaching</li><li>- pro-actively embracing challenges</li><li>- holistic development</li></ul> <p>Two of the public schools under investigation made no reference to SD or ESD.</p>
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**Table 4.2: Coding process: Excerpt of open coding to axial coding (public and private schools)**

Open codes	Analytical memo: Public schools	Analytical memo: Private schools	Theme/Axial code
<p><b>PUBLIC SCHOOLS</b></p> <p><b>Life skills</b></p> <p><b>Good citizenship</b></p> <p><b>Human dignity and tolerance</b></p> <p><b>Diverse democratic society</b></p> <p><b>Love of knowledge/learning</b></p> <p><b>Building for future generations</b></p> <p><b>Innovative teaching</b></p> <p><b>Pro-actively embracing challenges</b></p> <p><b>Holistic development</b></p>	<p>Four quintile 5 schools (schools that charged school fees) and one quintile 4 school were investigated. Quintile 4 schools receive a Norms and Standards allocation of approximately R803 per learner from the National Department of Basic Education. Quintile 5 schools receive R277 per learner. The shortfall for running the school effectively is supplemented by school fees. Quintile 1–3 schools are mostly in areas deemed to be poverty-stricken and do not charge school fees. They receive a Norms and Standards allocation of R1 602 per child. Some quintile 4 and 5 schools are, however, not necessarily in areas where all parents have an above-average income and struggle to make ends meet, with many parents applying for exemption of school fees, so budgets are tight and geared towards essentials. Unfortunately, very few quintiles</p>	<p>Although only one school made specific reference to sustainability in the Round Square programme that they followed, there were many references to ESD principles, skills, attitudes and competencies, such as:</p> <ul style="list-style-type: none"> <li>- skills, attitudes and knowledge to be global citizens of the future</li> <li>- lifelong and independent learning</li> <li>- innovative learning experiences</li> <li>- practical skills flowing from academic input</li> <li>- social responsibilities</li> <li>- forward-thinking</li> <li>- transformative world-view</li> <li>- critical, independent problem-solvers</li> </ul>	<p><b>ESD and SD referrals in mission and vision statements</b></p>

<b>PRIVATE SCHOOLS</b>	1–3 schools have websites or properly run social media accounts where data could be found.	- creative, innovative thinkers - adaptability to change	
<b>Global citizens of the future</b>		- ethics	
<b>Lifelong learning</b>	None of the public schools specifically mentioned ESD or SD in their motto, vision or mission, but some sustainability terminology was used, such as:	- caring thought-leaders	
<b>Innovative learning experiences</b>		- citizens of local and global communities	
<b>Holistic education</b>		- fearlessly following curiosity	
<b>Commitment to sustainability</b>	- future challenges	- learning through discovery	
<b>Lifelong learning</b>	- good citizenship	- risking failure	
<b>Independent study</b>	- contribution to country's growth and prosperity	- impacting society	
<b>Project-based learning</b>	- promoting human dignity and tolerance	- project-based learning	
<b>Innovative education</b>		- collaboration	
<b>Learn through discovery</b>	- lifelong learning	- use of future-focused technology	
<b>Critical thinking</b>	- building for the future		
<b>Risking failure</b>	- innovative teaching	- applying learnt material in a creative manner	
<b>Stewards of natural resources</b>	- pro-actively embracing challenges	- 21st-century skills	
<b>Care of environment</b>	- holistic development		
<b>Seeking justice</b>		All five private schools made	

<p><b>Peace</b></p> <p><b>Impact society</b></p> <p><b>Project-based learning</b></p> <p><b>21st-century skills</b></p> <p><b>Creativity</b></p> <p><b>Collaboration</b></p> <p><b>Independent thinking</b></p> <p><b>Future-focused technology</b></p>	<p>Two of the public schools under investigation made no reference to SD or ESD.</p>	<p>some reference to ESD principles and seemed to have had a much broader ESD language than public schools.</p>	
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### **4.2.3 Open coding to axial coding to selective coding**

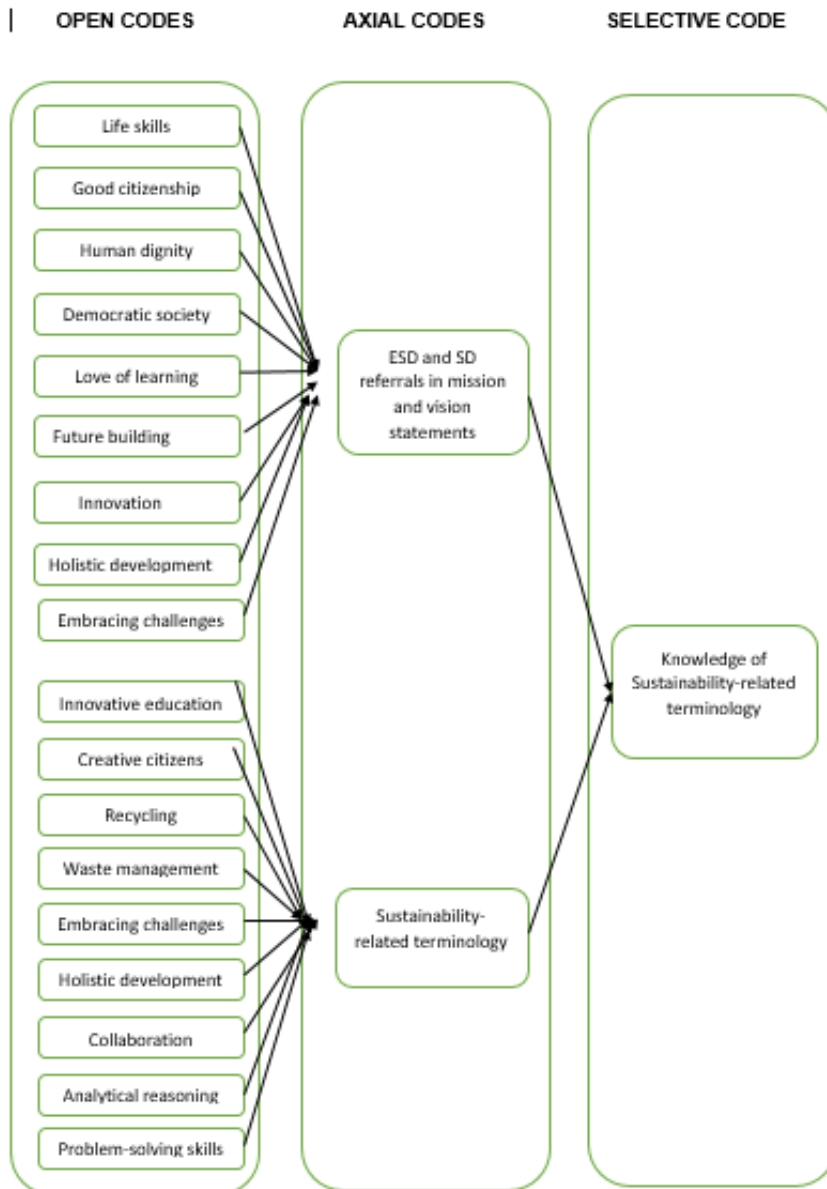
Throughout the systematic coding process, a total of 83 broad open codes were identified by categorising the data into relevant concepts. Axial coding was done next by examining the relationships between the concepts created during open coding. Axial coding describes the properties and dimensions of a category and investigates how the categories relate to each other (Saldana, 2012). Conditions, context, strategies and consequences were taken into account to connect codes to a category. In the context of this study, six categories (axial codes) emerged:

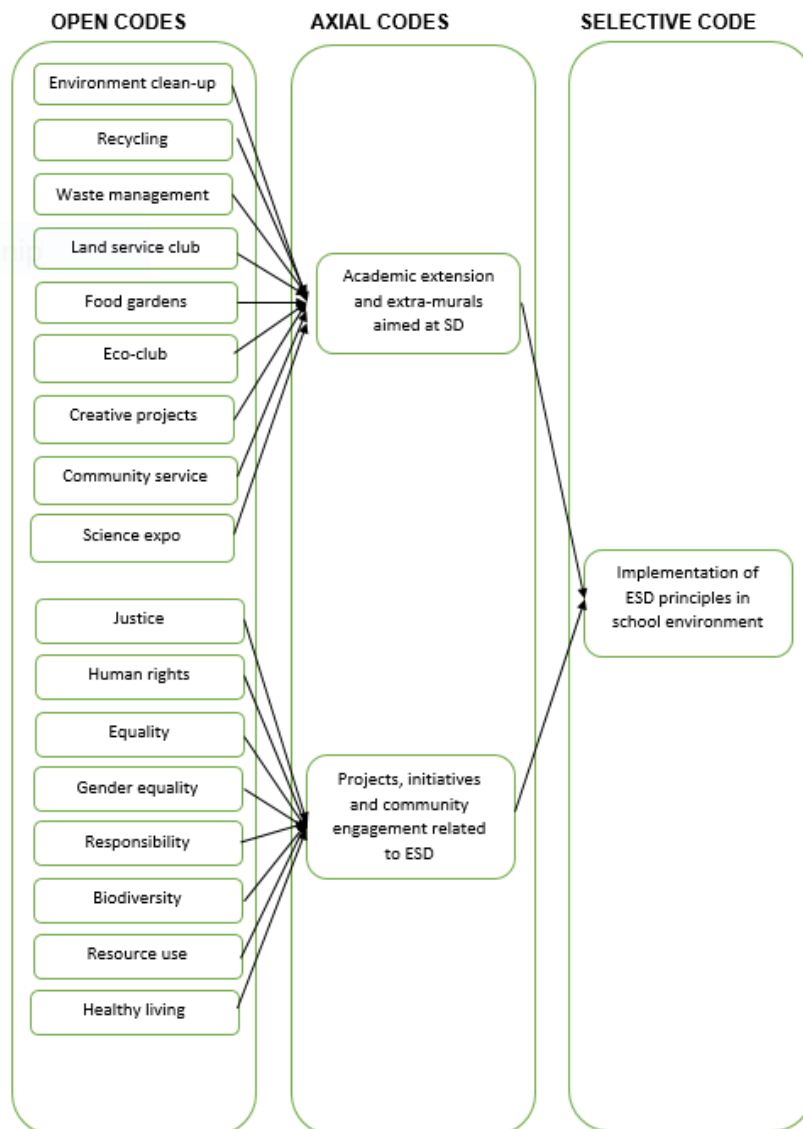
- a) ESD and SD referrals in mission and vision statements
- b) Use of sustainability-related terminology
- c) Pedagogies promoting SD competencies and attitudes
- d) Academic extension and extramural activities aimed at SD
- e) Projects, initiatives and community engagement relating to SD
- f) Adopting sustainability-related principles on the school grounds

From these six categories, two selective codes were developed that represent the central phenomenon of the study:

- a) Knowledge and use of sustainability-related terminology
- b) Implementation of ESD principles in the school environment.

As illustrated in figure 4.1, open codes led to categories, which informed the themes of the research.





**Figure 4.1: Visual representation of arriving at selective codes**

### **4.3 SUMMARY OF PROCEDURES FOLLOWED DURING DATA ANALYSIS**

Content analysis was done of purposefully selected documents of five public, and five private secondary schools of the Eastern Cape province, South Africa. The document analysis was done systematically and thoroughly as guided by grounded theory principles. After manually colour-coding the relevant text (77 documents), the open coding process yielded 83 open codes. The open codes were examined for similarities and differences as well as interconnections and were then meaningfully grouped to arrive at six axial codes. These six codes or categories were collated under two selective themes.

The descriptors used to label the documents selected for the study are tabulated below (table 4.3).

**Table 4.3: Descriptors used to label documents and create specific identifiers**

Descriptor	Explanation of descriptors
Pu	Public school
Pr	Private school
1–5	Number of the school
A/E/D	Language of learning and teaching (LOLT) at the school: A – Afrikaans E – English D – Double-medium
(4)/(5)	For public schools: this indicates the school quintile (fee or non-fee-paying school).
(R)/(C)	For private schools: this indicates whether it is a religious private school (R) or a commercial private school (C)
Doc#a/b	The number of the documents from each school  a/b/c indicates that the information was found in the same document but under a different heading.

#### 4.4 FINDINGS

The purpose of this study was to discover to what extent ESD had been implemented in selected South African public and private secondary schools (Eastern Cape province); and to identify challenges as well as effective practices that could aid in the effective implementation of ESD in other secondary schools.

Document analysis was conducted with six objectives in mind: (a) to define the role of ESD in secondary schools; (b) to determine the knowledge, skills and attitudes secondary school learners need to acquire to contribute to a sustainable future; (c) to identify effective practices in implementing ESD in public secondary schools; (d) to identify effective practices in implementing ESD in private secondary schools; (e) to identify the key challenges in implementing ESD in public secondary schools; and (f) to identify the key challenges in implementing ESD in private secondary schools.

Document analysis was done using the principles of grounded theory, which involve the previously described process of open coding, axial coding and selective coding. This process led to the identification of 83 open codes, which were then meaningfully grouped into axial codes (categories). Six categories emerged from axial coding, which then resulted in two selective themes: (a) knowledge of ESD and the use of sustainability-related terminology; and (b) implementation of ESD principles in the school environment. A summary of the themes and categories, in line with the research questions, is presented in table 4.4.

**Table 4.4: Themes and categories applicable to each research question**

<b>Theme (selective code)</b>	<b>Category (axial code)</b>	<b>Research question</b>
Knowledge of ESD and the use of sustainability-related terminology	1. ESD and SD referrals in vision and mission statements  2. Use of sustainability-related terminology	2. What is the role of ESD in secondary schools?
Implementation of ESD principles in the school	3. Pedagogies promoting SD competencies, skills and	3. What are effective practices in implementing ESD in public secondary

environment	attitudes	schools?
	4. Academic extension and extramural activities aimed at ESD	4. What are effective practices in implementing ESD in private secondary schools?
	5. One-off projects, initiatives and community engagements relating to SD	5. What are the key challenges in implementing ESD in public secondary schools?
	6. Adopting sustainability-related principles on the schoolground	6. What are the key challenges in implementing ESD in private secondary schools?

The next sections present the two themes that emerged from selective coding. The first theme, as illustrated in the above table, comprises two categories (emerged from axial coding) and provides answers to the research question exploring the role of ESD in secondary schools. The second theme, comprising four categories, addresses the questions about effective practices and challenges in implementing ESD in public and private secondary schools. Finally, the similarities and differences in two contexts (public and private schools) were compared.

#### **4.4.1 Knowledge of ESD and use of sustainability-related terminology**

##### **4.4.1.1 ESD and SD referrals in mission and vision statements**

ESD entails a fundamental change in thinking and practice which offers an education that is relevant and responsive to the challenges of SD (Theisse, 2013). Therefore, ESD is more than a new component to be incorporated into education; it is a completely different perspective on education. One would expect such a perspective to be reflected in the vision and mission statements of schools.

The five public schools under investigation were all quintile 4 and 5 schools, which means that these schools could charge a school fee. They could, therefore, be compared to the private schools under investigation, as none of them were considered to be schools in poverty-stricken rural areas where parents could not afford school fees. However, the reality is that these

schools are not all necessarily in areas where all parents have above-average income and in many schools, a large percentage of parents apply for exemption of school fees, so budgets are tight and geared towards essentials.

It was noticeable that none of the public schools specifically used the words “education for sustainable development” or even “sustainability” or “sustainable development” in their vision or mission statements. Some terminology related to SD was found in these statements, such as “life skills”, “good citizenship”, “contribute to our country’s growth and prosperity”, “human dignity and tolerance”, “diverse democratic society” (Pu1E(5)Doc1); “love of learning” and “building for future generations” (Pu3A(5)Doc1); “innovative teaching”, “pro-actively embracing challenges” and “holistic development” (Pu4E(5)Doc1). Even though the words “education for sustainable development” were not used, there seemed to be some understanding of the economic and social realms of sustainability, albeit possibly unintentionally. Two of the public schools made no mention to anything related to SD in their vision or mission statements, which could either illustrate a total ignorance of ESD or a disregard of the importance thereof.

Similar to public schools, none of the private schools mentioned ESD per se in their vision or mission statements, and only one private school made specific reference to “commitment to sustainability’ in the Round Square programme they followed (Pr1E(C)Doc1); however, there were definitely more references to ESD principles, skills and competencies in the vision and mission statements of the private schools. Terminology and phrases such as “global citizens of the future”, “allowing learners to learn anytime, anywhere”, “holistic education” (Pr1E(C)Doc1); “lifelong learning”, “develop skills in research and independent study”, “hands that are able to DO all that has been taught” (Pr2E(R)Doc1); “innovative education’, “learn through discovery”, “critical thinking”, “risking failure”, “stewards of natural resources”, “care of environment”, “peace”, “seeking justice for all” (Pr3E(R)Doc5a&c); “impact society” (Pr4D(R)Doc1); “project-based learning”, “21st-century skills”, “creativity”, “collaboration”, “independent thinking”, and “future-focused technology” (Pr5E(C)Doc1) illustrate that private schools use a much broader ESD terminology to express their visions and missions. The SD references of the private schools focus mostly on the environmental and social realms of sustainability and on the type of learning and teaching that should occur to enable learners to live sustainably.

#### **4.4.1.2 Use of sustainability-related terminology**

For this category, the use of sustainability-related terminology outside of the vision and mission statements were investigated to discover whether schools had knowledge of the vocabulary and principles of sustainability. The findings correlated strongly to what was found in section 4.4.1. There was no mention of terminology such as “ecologically correct”, “socially fair”, “economically

viable”, or “sensitive to local culture”. The public schools seem to have a very limited vocabulary pertaining to sustainability, with only a few general references to ESD skills found, such as “innovative education/teaching” (Pu1E(5)Doc2; Pu4E(5)Doc1), “creativity/creative citizens” (Pu1E(5)Doc2, Pu2D(5)Doc1), “pro-actively embracing challenges”, “holistic development” (Pu4E(5)Doc6), “collaboration”, “analytical reasoning”, “problem-solving skills” (Pu4E(5)Doc 6, Pu5E(4)Doc1 & 2) and reference to “recycling” and “waste-management” (Pu2D(5)Doc1) pertaining to an extracurricular activity.

Only two schools mentioned collaboration of any kind on projects – one was a slightly less privileged school (quintile 4) that collaborated with a private school to provide online tutoring for 30 Grade 8 learners and the other was a school that collaborated with a university department to enhance quality teaching and learning. Most public schools function in isolation, and competition between schools is more apparent than collaboration, so seeing some mention of collaboration is a small step in the right direction.

As with the public schools, there was no direct mention of sustainability-related terminology but rather mention of ESD skills. The private schools did seem to include these terms more consciously into the descriptions of their schools and activities, possibly as a selling point for parents. Terms such as “innovative learning”, “problem-solving” and “thinkers” (Pr1E(C)Doc1, 4 & 5, Pr3E(R)Doc3, Pr4D(R)Doc3, Pr5E(C)Doc1) were found in the documents of four of the five private schools. The use of the terms “connection”, “collaboration”, “teamwork”, “networking” and “co-operative learning” (Pr1E(C)Doc5, Pr1E(C)Doc9, Pr4D(R)Doc4, Pr5E(C)Doc1) were found in the documents of three of the private schools, indicating a slightly higher incidence of these important ESD skills in private schools than in public schools. The private schools also placed emphasis on learners having “a sense of responsibility”, “appreciation of diversity”, “commitment to sustainability” (Pr1E(C)Doc 5), “a transformative world-view” (Pr33E(R)Doc1), learners who could “fearlessly follow their curiosity and learn through discovery, critical thinking and even risking failure” (Pr3E(R)Doc3), were involved in the community and could contribute to society using 21st-century skills (Pr4D(R)Doc 4, Pr5E(C)Doc 1). The skills of creativity and critical thinking were explicitly mentioned by most of the private schools (Pr1E(C)Doc11 & 14, Pr3E(R)Doc1, 2, 3 & 4, Pr4D(R)Doc4, Pr5E(C)Doc1 & 2). The difference between public and private schools could be in the structuring of the syllabi or a different perspective on teaching and learning in general.

The literature review revealed that ultimately, the role of ESD is to prepare learners to become lifelong learners who are empowered, engaged, reflective and skilled citizens. Jickling (2016), however, argues that this mainstream concept of SD does not do enough to develop critical,

innovative and imaginative thinking about SD and the SDGs in particular. The data reveal that ESD is not implemented effectively enough in public schools to bring about these empowered, reflective and skilled citizens. Private schools focus more on actively cultivating critical, innovative and imaginative thinking, but on the whole, ESD does not seem to be fully integrated as an alternative form of education and as a result, cannot have its full impact in secondary schools. The lack of ESD and SD terminology in school documentation reveal that school leaders are not aware of the importance of these terminologies.

#### **4.4.2 Implementation of ESD principles in the school environment**

##### **4.4.2.1 Pedagogies promoting SD competencies**

Wals (2013) proposed that pedagogies that promote SD competencies veer away from the traditional educator–learner relationship where the teacher is the authoritative party who teaches and the learner is the one who absorbs the knowledge. In an ESD classroom, discoveries should be made together, and pedagogies should be teaching practices that would bring about a radical shift in perceptions. Unfortunately, none of the public schools under investigation showed promise regarding this important aspect of ESD.

Even though most of the public schools under investigation used 21st-century technologies and offered computer studies (Computer Applications Theory and Information Technology) and learners had access to computers or tablets (Pu1E(5)Doc2, Pu3A(5)Doc4, Pu5E(4)Doc1), there was no mention of the integration of ICT into their pedagogy, other than the use of interactive whiteboards at PU3 and the use of an online tutoring programme which included an introduction to coding to a select group of Grade 8 learners at Pu5. Pu1 offered an annual Grade 9 academic field trip (Pu1E(5)Doc2), which could be an example of experiential learning, and at Pu4, it was mentioned that the Grade 8's did a series of project-based tasks at home which focused on the environment. Educators also assisted learners in taking part in science expos (Pu1E(5)Doc2, Pu5E(4)Doc1), which shows that some project-based learning was taking place.

These examples, however, seem to be one-off deviations from the normal day-to-day teaching, focused on a select few learners, rather than a sustained implementation of pedagogies aimed at engaging the cognitive, psychomotor and affective domains of learners to ensure they are drivers of change. There is no evidence of real-life problem-solving, integration of subjects, place-based environmental education or outdoor education. Public schools seem to be stuck in a system of teaching that has not changed much over centuries. Bigger classes, the full curriculum, emphasis on examination, or finances could all be contributing factors.

At the private schools, there seemed to be more opportunities to take learners out of the classroom to give them practical experiences of the learning content: outdoor education, visiting speakers, outing opportunities, single-focus days, and integrated ITC seemed to be the norm rather than the exception.

Pr1 mentioned an outdoor programme designed to expose learners to the environment as well as develop service learning and teamwork, wilderness skills and outdoor leadership, and environmental awareness and ethics (Pr1E(C)Doc2). At Pr2, students benefitted from “a diverse programme of visiting speakers and a wide range of outing opportunities” that involved place-based environmental education using scientific knowledge – for example, water testing in the nearby valley (Pr2E(R)Doc1b). Pr3 employed a teaching pedagogy called “single-focus days”. On these days, learners are taken out of their classrooms to focus on using the knowledge gained in a specific subject. Examples are (a) the Grade 9 group investigated the river quality, identified river features, and analysed the impact of humans on river systems for Geography single-focus day; (b) the Grade 11 Geography class explored various landforms and drew sketches of mesas, cuevas and tors. They explored cuttings found along the national road and discussed strategies used to keep the area safe from landslides and rock falls (Pr3E(R)Doc10); (c) the Grade 12 Design class visited a guest house in the community to investigate sustainable and modular architectural and industrial design (Pr3E(R)Doc13). Pr4 focused on the integration of ICT into the teaching and learning as a way of making ideas happen. It encouraged its learners to do the unthinkable – start a business, invent something remarkable, serve a community in need, using their SHFT online learning system (Pr4D(R)Doc5). This shows a change of direction from the traditional educator–learner relationship. Pr5 similarly integrated technology into their pedagogy by using tablets as a tool for research and collaboration between learners. They offered modern technology such as robotics, drones, virtual reality and 3D printers to enhance the academic content (Pr5E(C)Doc4).

Both public and private schools still have much to learn about an interdisciplinary approach, as advocated by Kioupi and Voulvoulis (2019); place-based approaches where learners solve problems in their local environments and sustainability challenges are given personal relevance (Corner et al., 2015), but private schools seem better equipped and more willing to experiment with pedagogies that are different and new and engage learners in discovering for themselves.

#### **4.4.2.2 Academic extension and extracurricular activities aimed at SD**

In this category, academic extension activities that were not seen as part of normal teaching practices as well as extracurricular activities were considered.

For most schools, this is the easiest way to implement ESD to some extent without trying to fit it into the curriculum. Every school under investigation, whether public or private, had extramural or academic extension activities linked to ESD.

The Land Service or Eco Club has a proud EE history in South African public schools, and four of the five public schools had a club that focused on the environment with activities such as making outfits from waste materials, creating new slogans for recycling and waste management and investigating the decomposition times of waste products (Pu2D(5)Doc1), planting vegetable/food gardens or indigenous plants and donating vegetables to those in need (Pu2D(5)Doc3, Pu4E(5)Doc2a, Pu4E(5)Doc3, Pu5E(4)Doc2c), environmental clean-ups (Pu3A(5)Doc2, Pu4E(5)Doc2a), and planting seedlings for scientific testing and trials (Pu4E(5)Doc2a).

At the private schools, a similar trend was discovered, with the EE portfolio named “Outdoor education”, “Eco Club”, “Farming God’s Way Harvesting”, “The Environmental Portfolio”, and “From Waste to Glory”. The difference between the private schools and public schools was that in public schools, it was a volunteer activity for those that were interested after school hours, and at private schools, it was run more as an academic extension activity for certain grades. At the private schools, the following activities under the EE banner were seen: inter-house outdoor education day, vegetable garden, outdoor classrooms and natural outdoor learning venues (Pr1E(C)Doc2), a 21-day rite of passage for 16-year-olds that took them away from technology and into nature for a 21-day hike (Pr1E(C)Doc3); an Eco-club that was responsible to ensure that the school was environmentally responsible through activities like beach clean-ups, recycling initiatives, eradication of alien vegetation and to encourage students to live sustainably (Pr2E(R)Doc4); “Farming God’s Way Harvesting” aimed to teach others to effectively produce their own vegetables and empower students with a lifelong skill (Pr3E(R)Doc11); an Environmental Portfolio that organised litter pick-ups but also held debates and conversations about litter and its life-cycle in order “to discover more about how to preserve and understand the environment” (Pr3E(R)Doc15); and another 21-day Fish River Journey for Grade 10’s. It is a journey in which learners become aware of how much modern people consume and what their responsibility is in securing a quality life for future generations (Pr3E(R)Doc16) – Eco-brick projects (Pr3E(R)Doc17); finding innovative ways to use household recycling waste (Pr4D(R)Doc3); and beach clean-ups (Pr5E(C)Doc5).

At both the public and private schools, there were leadership initiatives and projects such as “Jackson’s Clean Green Project” by the Interact club (Pu1E(5)Doc4), community outreach

projects by Interact clubs or LED groups (Pu3A(5)Doc3a, Pr4D(R)Doc2, Pr5E(R)Doc1); and a collaboration on water management (Pr4D(R)Doc6).

Activities geared towards a fair, peaceful and healthy society were The National Moot Court competition for Grade 11 learners that focused on Children's Rights (Pu3A(5)Doc3b); an initiative of a Diversity and Inclusivity Committee to promote inclusivity (Pu4E(5)Doc2b); the Round Square Educational approach at Pr1, which incorporated the themes of internationalism, democracy, environmental stewardship, adventure, leadership and service (Pr1E(C)Doc5); and The President's Award at Pr3, which focused on empowerment of youth through community service, adventurous journey, skills development and physical recreation (Pr3E(R)Doc9).

Academic extension activities at the public schools mostly took the form of participation in science expos in which knowledge learnt in class was used to solve a current problem in society (Pu4E(5)Doc5, Pu5E(4)Doc2b), science fests and enrichment programmes (Pu4(5)Doc6, Pu5E(4)Doc2b, Pu5E(4)Doc4), or Science Olympiads (Pu5E(4)Doc5). At the private schools, there was evidence of outings and visiting speakers (Pr2E(R)Doc4), but ESD was more integrated into the pedagogy of private schools rather than just one-off academic extension activities.

#### **4.4.2.3 Projects, initiatives and community engagements relating to SD**

For this category, one-off initiatives that were not part of the normal extramural programme of the school was investigated. From the data collected, it seems as if the public schools had more one-off projects initiated by teachers and individual learners, whereas the private schools seemed to encourage community engagement as a lifestyle, where learners took the lead and learnt to become responsible citizens, with teachers playing a supporting role. School management also played a role in what was tolerated and allowed in schools, and it is clear that the one Afrikaans public school under investigation was far more conservative in terms of human rights activities than its English counterparts.

Wals and Kieft (2010) suggested that future education, citizenship education, education for a culture of peace, gender equality, respect for rights, health and wellbeing education should form part of a holistic interdisciplinary future-oriented ESD curriculum. Even though most of the schools under investigation were nowhere near to implementing these as part of their curriculum, there were sparks of hope in finding the following initiatives. Pu1 had a few social awareness initiatives – as an all-girls' school, their focus was on justice, human rights and equality for women with "Black Friday Against Abuse", "Let us break the silence", and "Red Lipstick Day" to empower women everywhere, and a "Teal Ribbons campaign" for violence

against women and children (Pu1E(5)Doc5a, b, c & d). At Pu2, a Grade 9 learner launched the #HELPA GIRL OUT project. This initiative sought to empower girls, with guest speakers addressing issues such as gender-based violence and substance abuse to how a girl could see her worth within society. Pu4 tasked learners to organise a Mandela Day service activity with the help of their parents (Pu4E(5)Doc4), and Pu5 invited two speakers to address learners on social justice. The first shared her journey from abuse to healing and inspired the girls to rise up from any form of gender-based violence; the second addressed the Grade 12 boys on how to treat women with respect and not as objects to be abused (Pu5E(4)Doc2a & d).

At the private schools, learners seemed to take responsibility for SD initiatives: at Pr1, pupils organised an annual Earth Hour concert and “initiate[d] community service programmes where teachers offer support and guidance” (Pr1E(C)Doc2); at Pr2, the Eco Schools Programme was steered by members of the Eco Club and they had achieved the Gold Award, allowing the school to fly the Eco Green Flag. Green themes included resource use, with the aim of extending the recycling programme to learners’ homes, biodiversity and healthy living (Pr2E(R)Doc3); Pr3 believed that community service was an important part of a girl’s education and they subscribed to the President’s Award Programme that encourages learners to become active in their communities (Pr3E(R)Doc5a & 9); equal rights and responsibility also featured in their Black History Month initiative, which focused on local history (Pr3E(R)Doc12).

#### **4.4.2.4 Adopting sustainability-related principles on the school grounds**

Halstead and Taylor (2000) emphasised that children learn values by observing what others do and drawing conclusions about what they think is important in life. It is, therefore, important for schools not only to teach about sustainability but to model examples of living sustainably. With this in mind, the sixth and last category under investigation was whether schools set the example of living sustainably. Unfortunately, whether by oversight of its importance, or whether public schools just did what was necessary for survival with the finances to their disposal, without making a fuss about it, no evidence could be found of initiatives like green energy, water-saving projects, green buildings, school-wide recycling projects or any other sustainability initiatives on the school grounds of the public schools under investigation.

The private schools, on the other hand, were very public about any sustainability projects – maybe from a marketing perspective in a very competitive environment. Evidence of environmental sustainability was found in the case of all five private schools, whether in design, teaching, reduction of their carbon footprint, implementing water-saving principles, or their building methods. Principles of sustainability were not only implemented on the school grounds but also consciously taught as illustrated in the following documents.

Pr1 advertised their school grounds as being a “magnificent 365-acre eco estate”; after recovering from devastating fires, the campus was rebuilt “with purpose and a modern and sustainable infrastructure”. They strove to have one of “the lowest carbon footprints per educated child” and launched “Eco Smart, a programme to reduce its impact on the environment and reduce energy consumption costs by 30%”. Not only had they implemented the programme, but they “want[ed] to create an eco-conscious mind-set amongst staff, pupils and their families to influence future generations”. They wanted to “inspire by using a progressive approach to modern education”. Each phase of Eco Smart focused on one aspect of sustainability, “namely energy generation, energy efficiency, water security and recycling”. They saw their eco credentials as “another attractive aspect” to their offering (Pr1E(C)Doc 4 & 16).

Pr2 was an Eco School as well, which means that they actively tried to reduce their carbon footprint (Pr2E(R)Doc3). As a boarding school in the drought-stricken Eastern Cape province, Pr3 invested in a “sound water management plan, which includes water storage and other saving measures”. They included the learners in this plan by limiting shower time to two minutes and using the water to flush toilets. The school uniform policy was also relaxed to reduce laundry volumes. It made a significant difference to their water consumption as a school (Pr3E(R)Doc18). Moreover, Pr4 initiated green building solutions for their Eco campus development by building log homes as teacher and student accommodation. One of the goals of Eco campus development is to “fashion a milieu in which children will learn to act responsibly towards their environment” (Pr4D(R)Doc7). Lastly, Pr5 “recognised the value of Environment, Social and Governance alignment and embarked on an environmental sustainability awareness journey during 2017 and 2018”. The school was “committed to improving its environmental sustainability performance by fostering a culture of sustainability and reducing its ecological footprint; incorporating principles and the understanding of sustainability into teaching, student learning, research, consultancy and community engagement”.

It is encouraging to see that the private schools viewed sustainability from a holistic perspective and not only set the example but incorporated it into their teaching philosophy. Public schools need to be made aware of the changing tide in the teaching landscape so that they, too, can become part of the solution.

#### **4.4.3 Similarities and differences between public and private secondary schools**

According to Esser and Vliegthart (2017), a mono-national study, such as this one, can contribute to comparative research if it is formulated with a larger framework in mind and follows the method of structured, focused comparison by George and Bennet (2005). The method is

“structured” in that a researcher uses general questions that are asked of each of the cases under study, with the aim of guiding and standardising data collection. These questions reflect the research objectives and make a systematic comparison of the findings possible. The method is “focused” in that it only deals with certain aspects of the case under study (George & Bennet, 2005). Esser and Vliegenthart (2017: 5) add that even isolated, single-country studies can carry universal significance if they are directed as “implicit” comparisons. An implicit comparison needs to be embedded in a comparative context, and the analytical tools should be taken from comparative literature. In this study, the selection of secondary schools under study was prototypical, as it had potential to serve as example of what could be done in at this level of education in terms of ESD.

Table 4.5 shows the likenesses between the two investigated contexts with regard to their knowledge and use of ESD terminology and the implementation of ESD principles in the school environment. In doing so, the similarities between Eastern Cape public and private secondary schools regarding the implementation of ESD are identified.

**Table 4.5: Similarities between public and private secondary schools**

<b>Similarities between public and private secondary schools</b>
Neither of the two types of schools mentioned the terms “education for sustainable development”, “socially fair”, “economically viable”, “ecologically correct” or “sensitive to local culture” in their vision or mission statements.
Secondary schools in the Eastern Cape province were nowhere near implementing the whole-school approach to ESD as requested by UNESCO.
Both types of schools had some references to sustainability-related terminology: (Pu1E(5)Doc2, Pu2D(5)Doc1, Pu4E(5)Doc1 & 6, Pu5E(4)Doc1 & 7, Pr1E(C)Doc1, 4, 5, 9, 11, 14, P2E(R)Doc1, 2, 3, 4, 8, Pr4D(R)Doc3, 4, Pr5E(C)Doc1, 2)
Both types of schools showed strong evidence of sustainability-related activities in their extramural programmes: (Pu1E(5)Doc4, Pu2D(5)Doc1, 3, Pu3A(5)Doc2, 3a, 3b, Pu4E(5)Doc2a, 2b, 3, 5, 6, Pu5E(4)Doc2b, 2c, 4, 5, Pr1E(C)Doc2, 3, 5, Pr2E(R)Doc1b, 4, Pr3E(R)Doc9, 11, 15, 16, 17, Pr4D(R)Doc 2, 3, 6, Pr5E(C)Doc1, 3, 5)

The focus on EE was still prominent in extramural activities: (Pu1E(5)Doc4, Pu2D(5)Doc1, 3, Pu3A(5)Doc2, Pu4E(5)Doc2a, 3, Pu5E(4)Doc2c, 4, Pr1E(C)Doc2, Pr2E(R)Doc4, Pr3E(R)Doc11, 15,17, Pr4D(R)3, 6, Pr5E(C)Doc 5)

Table 4.6 shows the differences in approach employed by the public and private secondary schools in terms of knowledge and use of sustainability-related terminology and implementation of ESD principles in the school environment. In turn, the table identifies the factors that distinguish the two contexts under investigation.

**Table 4.6: Differences between public and private secondary schools**

<b>Differences between public and private secondary schools</b>	
<b>Public</b>	<b>Private</b>
Only three of the public schools used some sustainability-related terminology in their vision and mission statements: (Pu1E(5)Doc1, Pu3A(5)Doc1, Pu4E(5)Doc1)	The private schools had a much broader knowledge and use of sustainability-related terminology, as all five schools made some reference to SD and ESD principles: (Pr1E(C)Doc1, Pr2E(R)Doc1, Pr3E(R)Doc5a, 5c, Pr4D(R)Doc1, Pr5E(C)Doc1)
Very little evidence of learning outside of the classroom, with only one annual academic excursion and one instance of doing tasks at home mentioned: (Pu1E(5)Doc2, Pu4E(5)Doc4)	More opportunities to take learners out of the classroom to give them practical experiences of the learning content, such as visiting speakers, outdoor education, outing opportunities, single-focus days, integrated ICT: (Pr1E(C)Doc2, 6, Pr2E(R)Doc1b, Pr3E(R)Doc10, 13, Pr4D(R)Doc5, Pr5E(C)Doc4)
Public schools have more once-off initiatives regarding community engagement and social justice projects (Pu1E(5)Doc5a, b, c, d, Pu2D(5)Doc2, Pu4E(5)Doc4, Pu5E(4)2a, d)	The private schools integrated and encouraged community engagement and social-justice projects, with learners taking the lead: (Pr1E(C)Doc2, Pr2E(R)Doc3,

	Pr3E(R)Doc9, 12)
No mention of the implementation of sustainability principles on the school grounds.	Implementation of environmental sustainability principles found in all five private schools: (Pr1E(C)Doc4, 16, Pr2E(R)Doc3, Pr3E(R)Doc18, Pr4D(R)Doc7, Pr5E(C)Doc6)

#### **4.5 EFFECTIVE PRACTICES IN IMPLEMENTING ESD IN PUBLIC SECONDARY SCHOOLS**

- a) The public schools under investigation were all successful in implementing ESD to some extent as an extracurricular activity, especially the EE curriculum as part of Land Service and Eco Clubs.
- b) One of the approaches to ESD is to incorporate ESD concepts into certain subjects. Although a thorough study of the curriculum was not part of the scope of this study, it was established that ESD concepts had been incorporated into the curricula of certain subjects, such as the Life Orientation syllabus for Grade 8, which includes topics such as human rights, Earth Day, and cultural diversity (CAPS, 2012).

#### **4.6 EFFECTIVE PRACTICES IN IMPLEMENTING ESD IN PRIVATE SECONDARY SCHOOLS**

- a) Private schools were effective in creating authentic learning through participation in community projects, as community service projects were encouraged and supported.
- b) ESD terminology describing the competencies learners should acquire to live sustainably seemed to be integrated into the teaching and learning of private schools.
- c) Like the public schools, the private schools had established ESD as an extracurricular activity.
- d) Perhaps their most successful practice was that they had all implemented ecologically correct sustainability principles on their school grounds. These principles – such as reducing their carbon footprint, water management, green building projects, etc. – were also consciously taught and promoted in the larger school environment. Modelling examples of living sustainably is more important than just teaching such principles.

#### 4.7 KEY CHALLENGES IN IMPLEMENTING ESD IN PUBLIC SECONDARY SCHOOLS

In the selection process of the schools, the size of the schools as well as the finances of the schools were taken into consideration in order to keep the public schools as comparable to the private schools as possible. An initial assumption at the start of the study was that the size of the schools would be a differential factor, but most of the public schools had 400–600 learners in the secondary school phase. The only exception was Pu5, which had approximately 1 000 learners. This was comparable to the private schools that all had between 300 and 400 learners.

The question arose as to why ESD was implemented into the curriculum and teaching pedagogies of private schools so much more cohesively than in public schools.

- a) One possible reason could be that even though the schools were similar in size, the classes in public schools were much larger. This makes teaching techniques that support ESD pedagogies – such as role playing to attain new insights on the perspectives of others; participatory action research that encourages the development of interdisciplinary teams; discussions that enable various perspectives and encourage listening and self-reflection – much more difficult. These teaching strategies also veer away from the traditional educator–learner relationship where the teacher is in control. As such, it could add to further disciplinary challenges in already crowded classrooms.
- b) For the same reasons of over-crowded classrooms and disciplinary challenges in public secondary schools, in addition to financial and logistical challenges, the focus of private schools on outdoor classrooms, outdoor education and academic fieldtrips is difficult to replicate in public schools.
- c) Another challenge for public schools (and possibly also private schools) that follow the NSC would be the very full, tightly controlled annual teaching plans (ATPs), as prescribed by the DoE. These teaching plans leave little time to “waste” on activities that are not included in the programme of assessment. Since ESD is in nature a tool with which to reshape the values and worldviews of learners as a way to address sustainability issues (Kioupi & Voulvoulis, 2019) and there is no consensus on what to evaluate in ESD, the evaluation and assessment of ESD becomes an obstacle to its implementation in public schools.
- d) As a result of the long and successful tradition of EE in public schools, it is still dominant in the extracurricular programmes of secondary schools instead of the more encompassing ideas of ESD. Change is difficult in public schools; thus, it is easier to keep a passionate teacher in the activity they have organised for 10 years than to try

and convince and train them to consider a new approach. Tradition is fierce opposition to change.

- e) Treating school subjects as independent entities also poses a problem to the implementation of ESD. Certain subjects, such as technology and science, cannot be separated in an ESD curriculum, but public schools work in specialist subject groups. The data of the public secondary schools in this study showed no integration of school subjects or interdisciplinary collaboration.
- f) Lastly, lack of leadership concerning ESD is a key challenge in its implementation. It is clear from the data gathered that neither the SGBs nor the SMTs of public schools were sustainability literate. There was no mention of ESD or SD in vision and mission statements, and the use of sustainability terminology in the description of school activities was limited. There was no evidence of the implementation of sustainability principles such as green energy, water management, etc., in the documentation of the public schools. Such evidence may well be present but lack of communication concerning it showed that there was no awareness of the urgency or importance of SD. Teacher confidence to apply ESD principles would not increase if the proper resources, support and time for experimentation are not priorities. These should be part of the vision of a school, as guided by the school leadership.

#### **4.8 KEY CHALLENGES IN IMPLEMENTING ESD IN PRIVATE SECONDARY SCHOOLS**

Most private schools seem to grasp the importance of ESD, and it is communicated and modelled to a certain extent by the leadership of the schools. They do have a few challenges, though:

- a) Private school educators are trained in the same educational institutions as public school educators. If their training is inadequate, or if they have been in the education system for a long time without being exposed to ESD principles, it would not matter whether they are in public or private schools. They would lack the skills and confidence to effectively implement ESD in their classrooms.
- b) Most private schools are managed as businesses and the competitive nature of the private school environment in terms of attracting potential clients, building a solid reputation and staying financially stable could hurt the implementation of ESD, which is, in its nature, non-competitive.
- c) This competitive nature of private schools could also contribute to a culture in which school leadership uses the “correct” terminology and emphasise what they deem to be

the most current educational trends as “window dressing” to attract potential clients without effectively implementing these principles in reality.

Chapter 5 discusses the emerging theory, and recommendations are made to stakeholders. Finally, conclusions are drawn.

# **CHAPTER 5: EMERGING THEORY, RECOMMENDATIONS AND CONCLUSION**

## **5.1 INTRODUCTION**

To reach the research purpose of this qualitative study, document analysis was conducted following the grounded theory methodology. The purpose of the research was as follows: (a) to systematically explore purposely selected documents to discover how effectively Eastern Cape secondary schools had implemented ESD; and (b) to make recommendations on best practices for implementing ESD in secondary schools. The research questions were formulated to reach the following research objectives:

- a) to define the role of ESD;
- b) to determine the knowledge, skills and attitudes secondary school learners need to acquire to contribute to a sustainable future;
- c) to identify effective practices in implementing ESD in public secondary schools;
- d) to identify effective practices in implementing ESD in private secondary schools;
- e) to identify the key challenges in implementing ESD in public secondary schools;
- f) to identify the key challenges in implementing ESD in private secondary schools.

The next section provides a brief summary of each of the preceding chapters (1–4). Next, the limitations of the study are discussed, whereafter the discussion focuses on emerging theory, recommendations to stakeholders based on the research findings, and concluding thoughts.

## **5.2 SUMMARY OF CHAPTERS**

In chapter 1, the origin of and background to ESD were discussed. ESD is increasingly seen as an integral part of quality inclusive education that is crucial for creating a sustainable future (Niemczyk, 2022). The problem statement and rationale for the study was discussed, and the research questions and objectives as well as the research methodology were stated. As an educator, the interest of the researcher in ESD was motivated by the question of how education could contribute towards an improved quality of life for every South African. In 2011, Van den Berg et al. found that the South African education system reinforced existing patterns of poverty and privilege. The current study sought to investigate whether ESD had been successfully implemented in secondary schools in recent years.

The literature review in chapter 2 explored the nature and role of ESD in the educational sphere, with specific reference to secondary schools in the South African context. Different

voices in the ESD debate were examined to find a balanced perspective; the competencies needed by secondary school learners to live sustainably were discussed, and pedagogies of and approaches to ESD were investigated. The barriers to sustainability outcomes in educational institutions, as found in literature, as well as sustainability issues in the Eastern Cape context were explored.

In chapter 3, details on the overall research design and methodology were provided; the theoretical framework of grounded theory research was discussed, with specific reference to the use of documents as a data-gathering technique; and the use of purposive sampling as well as the motivation for the sampling sites and sample size were explained. Lastly, thoughts on data saturation and analysis; the criteria for trustworthiness and credibility; ethical considerations; and the possible contribution of the study to the field of comparative and international education on ESD in secondary schools were included.

Chapter 4 was dedicated to data analysis and the research findings. Data analysis was guided by the principles of grounded theory, and a thorough and systematic process was followed to conduct a qualitative content analysis of 77 purposely selected documents. These documents were manually coded, starting with open coding and progressing to axial and selective coding.

The findings revealed that private secondary schools were further along the road of consciously implementing ESD, as shown by their use of ESD terminology and the implementation of ESD principles in school life and on the school grounds. At most of the public schools, ESD was almost incidental and driven by individuals in their extramural activities. In both private and public schools, much can still be done to achieve ESD from a whole-school approach, as is the approach to strive for from an ESD perspective.

Most of the successful implementation was as part of academic enrichment or the extramural programmes of the schools. The incidental implementation, as was seen at most of the public schools, highlighted that there was an ignorance regarding ESD among the leadership of these schools. In private schools, leadership seemed more aware of the principles of ESD and the importance of sustainability.

### **5.3 LIMITATIONS OF THE STUDY AND POTENTIAL FUTURE RESEARCH DIRECTION**

Two limitations were identified:

- a) As the Eastern Cape is regarded as one of the weaker provinces in the South African education system with regard to infrastructure, matric results and financial management, the study findings are not fully transferrable to secondary schools in other provinces.

Secondary schools in other provinces might employ different strategies for ESD. Also, there were no quintile 1–3 schools in the study. Furthermore, only 10 secondary schools were studied; therefore, the findings cannot be generalised.

- b) Due to the restrictions posed by the Covid-19 pandemic, the document analysis was the only data source, thus not all data regarding the implementation of ESD were accessible. Interviews with SMTs as well as educators could shed more light on the phenomenon and may yield an interesting perspective on how much school management and educators know about ESD.

With regard to future research, there are three areas to which researchers could contribute further to ensure the effective implementation of ESD in secondary schools:

- a) Firstly, researchers could investigate and develop professional development strategies and content that would educate and empower SMTs as to what ESD entails and how it could be implemented in their schools. Most secondary SMTs consist of senior educators who have been teaching for 15 or more years. As a result, they were not necessarily exposed to training on the subject when they were studying.
- b) Secondly, research could be conducted on how to empower educators to adopt sustainability pedagogies in their classrooms. Various authors (Hunter & Jordan, 2020; Læssøe, 2009; Lotz-Sisitka et al., 2017; Ramsurap, 2013; UNESCO MGIEP, 2017) have pointed out how the lack of ESD knowledge of educators is a hindrance to the implementation thereof, and this was reiterated in the results of this study. It is not enough to convey knowledge, as it occurs in textbooks, without knowing how to change attitudes or empower learners with skills to solve real-world problems.
- c) Even though ESD has been incorporated into the curriculum and there has been an increase in project-based assignments, the focus in public schools is still very much on exam-based assessment. Lack of standardised evaluation tools for ESD outcomes was cited as one of the main obstacles to ESD in South Africa (Kioupi & Voulvoulis, 2019). The development of effective tools to evaluate and monitor ESD outcomes by researchers could assist educators in implementing ESD as a whole-school programme.
- d) Although the South African DOE has written ESD into its policies and curriculum, there is little evidence of its successful implementation in schools. From the collected data, it seems as if private schools had more success in integrating ESD into their pedagogies. There exists an opportunity for researchers to examine the differences between the National Curriculum Statement (NSC) and CAPS and the Independent Examination Board regarding assessment strategies to assist the national DOE in supporting public schools to implement ESD.

## 5.4 ARRIVING AT AN EMERGING THEORY

As stated in section 1.6.1, studies that employ the grounded theory approach aim towards conceptual thinking and theory building rather than the empirical testing of a theory (Khan, 2014). Theory building research endeavours to find similarities across many different spheres to define the variables, to specify the sphere, to build internally logical relationships, and to make definitive predictions (Walker, 1998). This research used the evolved grounded theory, as it acknowledged what had been done before in the search to understand ESD but it also allowed the researcher to remain open to new findings in the field that could lead to the outlines, consistencies and significances that build new theories.

The definitive theory in this research was reached by breaking the data into relevant concepts. The relationships between these concepts were analysed to discover how the conditions, strategies and consequences linked together to form categories. Six categories emerged. These six categories were further scrutinised, connected and integrated with the help of analytical memo-writing, the revisiting of raw data and reflecting on the open and axial codes to develop two themes that represent the central phenomenon of the study. These two themes – (a) knowledge and use of sustainability terminology and (b) implementation of ESD principles in the school environment – led the researcher to notice that compliance with ESD principles depended very much on the knowledge and educational philosophy of school leadership. The emerging theory is thus that school leadership (SGBs and SMTs, in the case of public schools) and school boards and leadership teams (in the case of private schools) determine how effectively ESD is implemented in school environments. It is not entirely up to the DOE or ISASA to make sure that ESD is implemented, but the responsibility of each SMT to ask how they can adapt to this "new" way of thinking.

This theory was well illustrated by the six categories that emerged from axial coding. School boards and SGBs are responsible for the vision and mission of their schools, and this is something unique to each school. These vision and mission statements, combined with statements of faith, in the case of religious private schools, clearly illustrated how much management knew about ESD or how important they deemed it to be. None of the schools, public or private, specifically mentioned ESD in their vision or mission statements. The use of sustainability terminology throughout school documentation illustrated, though, that private schools had more knowledge of sustainability knowledge, and themes 4–6 – the use of pedagogies promoting SD competencies; academic extension and extramural activities aimed at SD; projects, initiatives and community engagements relating to SD; and adopting sustainability-related principles on the school grounds – all reiterated the emerging theory that

school leadership is ultimately responsible for implementing or not implementing ESD in the school context. In private schools, most managements recognised the importance of using the SD principles as marketing tools for a customer base who is willing to pay for something different or better than what public schools can offer their children.

In the public sector, schools compete on more "traditional" playgrounds, such as sporting results, matric results and facilities. It seems as if management of public schools is either ignorant or choose to ignore the value that ESD can add to their schools. Finances and class sizes could be a determining factor in the differences between public and private schools. Furthermore, the differences in assessment and the educational philosophies could determine what is emphasised in the pedagogies used in the classroom and the time spent on different aspects of the curriculum. More research is needed to test this theory, but it is clear that there are differences even in the same types of schools who follow the same curriculum, so it has to be placed at the door of the leaders of these schools.

## **5.5 RECOMMENDATIONS**

The findings in chapter 4 were drawn upon to make the following recommendations to different stakeholders in secondary education in South Africa:

### **5.5.1 Recommendations to the Department of Education**

As all schools in South Africa are under the umbrella of the national DOE, it is still the responsibility of the Department to guide schools in terms of policies and direction. The DOE is ultimately responsible for ensuring that quality education is offered to learners in South Africa, hence, the following recommendations:

- a) Evaluate whether research and training at institutions of higher training are adequately equipping new teachers to implement ESD in their classrooms.
- b) Develop a national strategy to improve teacher training. "Sustainability starts with Teachers" is an online course aimed at teacher and TVET educators that can be used on a much larger scale.
- c) Develop a definition of ESD in the South African context and communicate it to all stakeholders.
- d) Even though the NSC and CAPS have improved on the previous outcomes-based curriculum, there is still room to refine the curriculum to make room for ESD-type evaluations and projects that allow for exploration, invention and failure. Incorporating ESD concepts into certain subjects is not enough.

- e) There is a need to develop innovative and standardised tools to monitor and evaluate ESD outcomes in educational institutions.
- f) After effectively evaluating ESD outcomes, identify schools that can become "champions" in their regions. These schools can be examples and assist other schools with the implementation of ESD.
- g) Connect schools with Regional Centres of Expertise, who can guide and assist in the implementation of ESD.
- h) Improve inputs such as teaching materials, teacher training, and curriculum development.

### **5.5.2 Recommendations to teacher unions and teacher associations**

- a) Teacher unions and associations should hold the DOE accountable to give teachers the necessary assistance to do their jobs.
- b) Professional development is a prerequisite for educators who are registered with the South African Council of Educators (SACE). Educators must earn CPTD points to prove that they are developing professionally. It is therefore a golden opportunity for SACE providers to develop accredited courses on ESD.

### **5.5.3 Recommendations to school leadership**

As the emerging theory revealed, school leadership is ultimately responsible for whether ESD is implemented. Lack of knowledge should not be a contributing factor to the non-implementation of ESD.

- a) School leadership should empower themselves with knowledge of ESD and be aware of the knowledge, skills and attitudes that learners need to acquire to become sustainable citizens.
- b) They should develop a common vision for sustainability in their school.
- c) Leadership teams should ensure that their school communities (educators, learners and parents) become sustainably literate.
- d) Leadership teams should regularly take vision and mission statements under review to ensure that they stay relevant in the current educational landscape.
- e) Leadership teams should take steps to model and communicate sustainable living by using the school environment as an example of recycling, the use of green power, water management, an environment of equality, and sustainable financial management.
- f) ESD should not just be implemented as extramural activities that overburden selected teachers but as a completely new perspective on teaching. Collaboration, an

interdisciplinary approach to subjects, real-life problem-solving, innovation and creativity should become part of the school ethos.

- g) Leadership teams should ensure that educators in their schools receive adequate training and professional development to become competent in using ESD pedagogies.
- h) Selby (2017) reiterated that humans are only stirred to protect that which they love. It is up to school leadership to localise ESD content so that educators and learners feel they are making a difference in their own communities.
- i) School leadership should take responsibility to reach out to schools that are successful in implementing ESD and to learn and collaborate for the greater good of society, instead of viewing other excellent schools as competition for learners, resources and rankings.
- j) Collaborate with community projects, community leaders in sustainability, non-profit organisations and community activists to expose learners to real-life problems outside of the school grounds.

#### **5.5.4 Recommendations to educators**

Educators are the ones who stand in the classrooms and who have to practically implement the ESD principles. It is, therefore, imperative that they:

- a) take responsibility for equipping themselves with knowledge and skills in areas where they feel inadequate;
- b) empower themselves with knowledge about the 17 SDGs and display it in their classrooms to create awareness;
- c) use pedagogies that will help learners think critically, which will result in mind shifts.
- d) set an example in class of living sustainably, through simple activities like the recycling of paper, switching off of lights, treating everyone equally;
- e) emphasise the value of fearlessness in their classrooms: fearlessness to have different viewpoints, to try something new, innovate, be creative, and make mistakes in the process;
- f) consciously veer away from traditional educator–learner dynamics where the teacher teaches and the learner learns, and to collaborate in the learning process with learners;
- g) share and collaborate with colleagues in similar subjects to find best practices in this ESD journey;
- h) stop seeing their subjects as independent silos of knowledge and learn to follow an interdisciplinary approach as is required to solve real-world problems;
- i) think from an ESD perspective when setting tasks and projects to make the problem-solving relevant and place based;

- j) evaluate the ESD journey on a regular basis to see if it is effective.

## **5.6 CONCLUSION**

As mentioned in the introduction of this research, SD is one of the most urgent challenges of our time. Today's world presents an environment with immense degrees of inequality, social exclusion, poverty and environmental destruction. The United Nations Agenda 2030 was conceived from this realisation and has as its goal the promotion of prosperity while protecting the environment and the people in it. ESD is a vehicle with which to achieve this goal. UNESCO (2014) emphasised that ESD was designed to empower learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity. It is about lifelong learning and should be an integral part of quality education. ESD is holistic and transformational education that addresses learning content and outcomes, pedagogy and the learning environment. It should achieve its purpose by transforming society.

If ESD, as formulated by UNESCO, is to be implemented effectively in both public and private secondary schools in South Africa, this research shows that more attention should be devoted to the responsibilities of the DOE, the knowledge of school leadership and the competencies of teachers. ESD requires a complete change of perspective towards education, and although schools should be guided and supported by the DOE, it really is the responsibility of each school to experiment and discover innovative ways of implementing it into their unique context. The aim of most secondary schools is to send responsible young people out into the world who can contribute to society. It is important, though, that the leaders of schools educate themselves as to the knowledge, skills and attitudes required in today's society. What is concerning based on research is that many public schools seem to be entrenched in the traditional ideas and systems of education that have been obsolescent and useless for decades.

The term ESD was adopted at the World Summit on Sustainable Development in Rio de Janeiro in 1992 already, and the reorientation of the education systems of the time was also discussed at the UN World Summit in Johannesburg in 2002 as being key to SD (Nevin, 2008:49). The importance of ESD in promoting the development of the understanding, knowledge, skills, values and actions needed to create a sustainable world was outlined then, and the United Nations forecasted 2005 to 2014 as the Decade of Education for Sustainable Development. After the decade of ESD failed to make the necessary impact, the importance of ESD was again emphasised when five years after the formulation of the SDGs Mission 4.7 was launched in 2020 with the aim of accelerating this goal (Mission 4.7, 2020). Currently, a key element of the

2030 Agenda for Sustainable Development is ESD. This forms one of the targets of the SDGs on Education (SDG 4.7) and is seen as key to achieving all 17 SDGs (UNESCO, 2019).

It is unsettling that more than 30 years after ESD was adopted as a concept, so little of it has infiltrated into the South African secondary schools under investigation. Only little more than seven years are left to reach the goals of the 2030 Agenda for Sustainable Development. If educational institutions do not start taking responsibility to educate themselves regarding ESD with the aim of effectively implementing it in their institutions, they may well send out their learners into a world that cannot support them anymore.

The hindrances to the implementation in both public and private secondary schools were discussed in chapter 4, but it is time to look past the challenges and use critical and creative thinking to discover innovative solutions to those obstacles. It cannot be left to governments or departments of education. ESD needs champions on the ground who will start driving this agenda, but education is key, and it seems as if it needs to be the educators and leaders who will have to be educated first. Private schools have proven that they are further along the road of ESD, and although contextual differences must always be taken into account in comparative educational research, public schools can investigate the successes that private schools have had and decide which of those concepts or strategies can be adapted to work in their contexts. It is also clear that with ESD, schools cannot function effectively in isolation. ESD works best to change attitudes and perceptions if done in a local context. It is thus to the advantage of schools to connect with ESD champions in their local communities and to collaborate with other schools or subjects to work on finding solutions to real-life problems in their local contexts.

South Africa is a country with many sustainability challenges. The education system can no longer afford to plead ignorance to the challenges around them without using the tools at their disposal to adequately prepare their learners for a VUCA future.

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## ANNEXURE A: OPEN CODES

Coding process: Open coding: Public Schools

Doc	Source	Actual Text	Open Coding	Analytical memo
Pu1E(5)Doc 1	Website: Vision & mission	<p>4. Strive to equip our learners with <b>LIFE SKILLS necessary to face challenges</b> both at school and <b>in the future</b>.</p> <p>5. Strongly promote RESPECT FOR AUTHORITY, THE RULE OF LAW and the ideal of <b>GOOD CITIZENSHIP</b> in order to <b>contribute to our Country's GROWTH and PROSPERITY</b>.</p> <p>6. Respect and promote <b>HUMAN DIGNITY and TOLERANCE in our DIVERSE DEMOCRATIC SOCIETY</b>.</p>	<p><b>Life skills</b>  <b>Good citizenship</b>  <b>Human dignity and tolerance</b>  <b>Diverse democratic society</b></p>	<p>4 Quintile 5 schools (schools that charge school fees) were investigated as well as 1 Quintile 4 school. Quintile 4 schools receive a Norms and Standards allocation of approximately R 803 per learner from the National Department of Basic Education. Quintile 5 schools receive R277 per learner. The shortfall for running the school effectively is supplemented by school fees. Quintile 1–3 schools are mostly in areas deemed</p>

Pu3A(5)Doc1	Website: Welcome	<p>“Ons glo dat opvoeding nie net is om boekgeleerdheid te hê nie, maar om <b>kennis lief te hê</b> en lewenswysheid te ontwikkel”.</p> <p>Bou nie net vir vandag nie, vir die verbygaande tyd nie, maar <b>bou vir ewigheid</b>.</p>	<p><b>Love of knowledge/learning Building for future generations</b></p>	<p>to be poverty-stricken and do not charge school fees. They receive a Norms and Standards allocation of R1 602 per child. Some Quintile 4 and 5 schools are, however not necessarily in areas where all parents have an above-average income and struggle to make ends meet with many parents applying for exemption of school fees, so budgets are tight and geared towards essentials. Unfortunately very few Quintile 1-3 schools have websites or properly run social media accounts were data could be found.</p>
Pu4E(5)Doc1	Website: Headmaster’s message	<p>(Public School 4) remains at the forefront of <b>innovative teaching</b>. For over 125 years we have not only continuously adapted to the changing environment, we have done so as leaders: <b>pro-actively embracing challenges</b>. We thrive on challenges, the greatest of which is the <b>holistic development</b> of our learners. <b>Our focus will never be on academic development solely, or on sport or cultural activities. It cannot be if we want to help each learner on the road to self-discovery and self-actualisation.</b></p>	<p><b>Innovative teaching Pro-actively embracing challenges Holistic development</b></p>	<p>None of the public schools specifically mentioned ESD or SD in their motto, vision or mission, but some sustainability terminology was used, such as:</p> <ul style="list-style-type: none"> <li>- future challenges</li> <li>- good citizenship</li> <li>- contribution to country’s growth and prosperity</li> <li>- promoting human dignity and tolerance</li> <li>- life-long learning</li> <li>- building for the future</li> </ul>

				<ul style="list-style-type: none"> <li>- innovative teaching</li> <li>- pro-actively embracing challenges</li> <li>- holistic development</li> </ul> <p>Two of the public schools under investigation made no reference of SD or ESD</p>
Pu1E(5)Doc2	School website: Academic excellence	<p>'Beyond the school environment the girls are challenged by means of <b>innovative</b> educational adventures'</p> <p>'...girls who are able to play their part as caring, confident, and <b>creative citizens</b> of South Africa and the world at large.'</p>	<p><b>Innovative education</b></p> <p><b>Creative citizens</b></p>	<p>No mention of ecology, social fairness, economic viability, sensitivity to local culture, or project-based learning mentioned in any of the data for public schools</p> <p>One reference to analytical reasoning in the context of an Olympiad.</p> <p>Some reference to creativity and innovation (3 schools)</p>
Pu2D(5)Doc1	School website: News 2.8/22	<p>'They were also challenged to create a new slogan for <b>recycling and waste management</b>.</p> <p>The <b>creativity</b> of the learners exceeded all expectations, from the "Robot Man" to "KFC Couture".</p>	<p><b>Recycling</b></p> <p><b>Waste management</b></p> <p><b>Creativity</b></p>	<p>Some reference to creativity and innovation (3 schools)</p>



Pu1E(5)Doc2	School website: Academic excellence	The computer room, Music Block, media centre, and other enrichment facilities, are all an integral part of the school's academic framework' 'the girls are challenged by means of innovative educational adventures such as the annual Grade 9 academic field trip, Grahamstown Science Festival'	<b>Enrichment facilities</b> <b>Innovative educational adventures</b> – <b>academic field trips</b> –	Most of the public schools studied offer computer studies (CAT & IT) and learners have access to computers, but none of the schools seem to integrate IT as part of their pedagogy except for Pu3, who mentions interactive whiteboards and Pu5 who has launched an online tutoring programme for gr 8 learners using sponsored tablets.
Pu3A(5)Doc4	School website: Fasiliteite	'Die skool beskik oor twee rekenaarlokale, tegnologie- en verbruikerstudielokaal, 'n mediakamer en biblioteek, interaktiewe witborde en internet is in klasse beskikbaar.'	<b>Use of technology – interactive white boards</b>	There is some evidence of project-based and independent learning and some practical exposure in some subjects. No evidence of real-life problem-solving
Pu4E(5)Doc4	School newsletter 22/6/22	During the last week of this term the Grade 8s will be doing a series of tasks at home. The focus will be on the environment.	<b>Project-based tasks with focus on environment</b>	
Pu5E(4)Doc1	School website: Learners	(Public school 4) has embarked on an online tutoring programme for 30 grade 8 learners which started in June 2021. Jendamark Automation, rolled-out its Omang e-learning tablets as part of their Odin Education software system. These devices provide affordable access to curriculum specific educational material for schools. Each learner learns at his/her own pace and explore the device for video content, online tutorials, assessments et. Twice a week, the pilot group of 30 learners, interact with the device and also participates in online tutoring with various tutors in a range of subjects that include	<b>Online tutoring e-learning tablets learning at own pace theme-based lessons Coding</b>	Are pedagogies in public schools still stuck in the previous century or are finances the problem? Maybe the curriculum and school system?

		<p>Mathematics, Natural Science, languages and EMS (Accounting based work). On Mondays, exercises and content is on the device and learners must work through it.</p> <p>On Thursday there are live lessons with tutors. Tutors will revise old work and introduce new work. The tutors have now introduced QUEST X, which is basically social science and creative arts (theme based lessons.) Learners learn to manage their own time and ensure that tasks are completed on time.</p> <p>Dr. Ron Beyers of YESA has come on board and he introduced CODING to the group of learners as well.'</p> <p>Wednesday 3 March was the launch of <b>EXPO at (Public School 4) for 2021</b>. The aim is to upgrade two previous Physics Projects and to start new projects to assist with food security, purification of water and also a project or two in the category of Mathematics.</p>	<b>Project-based education</b>	
Pu1E(5)Doc4	Facebook entry 19/10/22	<p><b>INTERACT – JACKSON'S CLEAN GREEN PROJECT</b></p> <p>Interactors helped at the Jackson's Clean Green Project by picking up papers around the Pick &amp; Pay area.</p>	<b>Environmental clean-up projects</b>	<p><u>Academic extension:</u></p> <ul style="list-style-type: none"> <li>- Science expos and Sci fest develop critical thinking and problem-solving skills</li> <li>-Collaboration with an Engineering company opens doors for learners to develop 21<sup>st</sup> century skills</li> </ul>
Pu2D(5)Doc1	School website: News 2/8/22	<p>On Wednesday 27 July 2022, the (Public school 2) Land Service members were challenged to create an entire outfit made from waste material, and as always they did not disappoint. They were also</p>		

		<p>challenged to create a new slogan for <b>recycling and waste management</b>.</p> <p>Die Landsdieners het nie net uitstekende uitrustings gemaak nie, maar ook besef hoe lank verskillende materiale neem om natuurlik te ontbind. Hulle is nou gemotiveerd om 'n verskil te maak sodat ons die wêreld kan bewaar!</p>	<p><b>Recycling Waste management</b></p>	<p><u>Extra-mural activities:</u></p> <p>-Interact clubs focused on community service (citizenship)</p> <p>-Land service/Eco clubs focused on the environment, recycling, waste management, planting food gardens and indigenous plants, creativity, problem-solving.</p>
Pu2D(5)Doc3	Facebook entry 10/9/21	<p>The land service members realised a few new things during the Covid-19 pandemic. Never take anything for granted, appreciate what you have and help those in need.</p> <p>On Wednesday 8 September some of the Land service members started preparing the soil for a new project... <b>A vegetable garden</b>.</p> <p>Die Landsdieners het 'n behoefte raakgesien en het besluit om sake in hulle eie hande te neem. Sommige Landsdieners het hulle <b>kreatiwiteit</b> ingespan en pragtige houtbordjies versier. Terwyl die res moes sweet om die grond omgespit te kry.</p>	<p><b>Land Service club Food gardens</b></p> <p><b>Creative projects</b></p>	<p>-Moot court develops critical thinking, ethical awareness and an awareness of human rights/democracy</p> <p>-Diversity and Inclusivity committee promotes rights for all and justice</p>

Pu3A(5)Doc2	Facebook entry 25/4/21	<p>Die Eco-klub bestaan uit 'n groep leerders wat in <b>omgewingskwessies</b> belangstel en graag 'n sigbare positiewe verskil aan die omgewing en gemeenskap wil maak. Die doel van die Eco-klub is: <b>sensitiewe hantering van die omgewing; ontwikkeling van vaardighede, 'n positiewe houding en etiese, verantwoordelike optrede teenoor die omgewing; om omgewingsprobleme krities te analiseer en om strategieë te implementeer om 'n positiewe verskil te maak...</b> Op Woensdag, 8 Junie 2022, is dit Wêreld-oseaandag. Dit is die dag wanneer oseane vereer word. Die Eco-klub beplan om op hierdie dag 'n strand te gaan skoonmaak om sodoende 'n bydrae te lewer.'</p>	<p><b>Eco-club Critical analysis of environmental challenges Ethical and responsible behaviour Implementation of solutions Environmental clean-up</b></p>	<p>-Climatology club expose learners to practical climate issues</p> <p>Most ESD related activities in public schools seem to fall into the extra-curricular activity category. Most of it is eco- and environment related. This means that only a few interested learners are exposed to it and it is driven by one or two passionate educators</p>
Pu3A(5)Doc3a	School website: Kultuur	<p><b>Interact</b> MOTTO: Helpende hande in 'n stukkende wêreld Interact is die benaming van die Rotariër jeuggroepe wêreldwyd wat op gemeenskapsdiens gefokus is en mensliewendheid, vrede en respek teenoor die lewe nastreef.</p>	<p><b>Interact clubs Community service</b></p>	
Pu3A(5)Do3b	School website: Kultuur	<p>Nasionale Skynhof-kompetisie (Moot Court) Leerders kry die geleentheid om aan die Nasionale Skynhof-kompetisie in Pretoria deel te neem. Die kompetisie is vir graad 11-leerders en word jaarliks deur die Universiteit van Pretoria, in samewerking met die Universiteite van Wes-Kaap, Venda, die Stigting vir Menseregte, die Departement van Justisie en Konstitusionele-ontwikkeling, die Sentrum vir Kinderregte en die Departement van Onderwys aangebied. Die leerders kry 'n saak wat altyd op <b>kinderregte</b></p>	<p><b>Moot Court Human Rights Equality Fairness</b></p>	

Pu4E(5)Doc2a	School website: Extramural Activities 2	<p>gemik is en wat wat in die konstitusionele hof beveg moet word en albei partye in die saak moet verteenwoordig word. Die doel van die kompetisie is om hul meer van Suid-Afrika se grondwet bewus te maak en hul te leer om <b>na albei kante van 'n saak te kyk.</b></p> <p>The Eco Club is involved in a number of projects. These include:</p> <ol style="list-style-type: none"> <li>1. The Waainek Mass Rearing Facility where they have planted seedlings and prepared plants for scientific testing and trials.</li> <li>2. Clean up around the Grey Dam.</li> <li>3. Planting an indigenous tree nursery on the school grounds.</li> </ol>	<p><b>Eco Club Scientific testing and trials</b></p> <p><b>Environmental clean-up</b></p> <p><b>Planting of indigenous trees</b></p>	
Pu4E(5)Doc3	Facebook entry 18/2/22	<p>The Eco Club members are a hard-working group of people who are extremely dedicated to our environment.</p> <p>Growing one's own food is one of the most empowering skills to learn! The Eco-Club has just sown the seeds for a small food gardening project in recycled tyres that will hopefully serve to educate and get learners excited about growing things! Harvests will be donated to Food4Futures, a charity organisation situated just down the road from the school.</p>	<p><b>Eco Club Food garden</b></p>	
Pu4E(5)Doc2b	School website: Extramural activities	<p>As the Diversity and Inclusivity Committee we are devoted to promoting the idea of inclusivity within the school, as well as bringing to light the diverse backgrounds and identities of all our students.</p>	<p><b>Diversity &amp; Inclusivity</b></p>	

Pu4E(5)Doc5	School website:	On 6 August the Regional ESKOM Science Expo was held at the 1820 Settlers' Monument...Over the course of the morning the entrants displayed their research projects, were interviewed by judges and attended a science themed show.	<b>Science Expo</b>	
Pu4E(5)Doc6	Newsletters 15/8/22	On the 9th of September, a group of 8 girls went to the Sci-fest. We got to experience the world of Science from having to generate electricity with a bicycle to learning how astronauts equip themselves to be fit for space.	<b>Science Fest</b>	
Pu5E(4)Doc2b	School website: Newsletters 30/9/22	On Thursday 4 March 2021, <b>iGEMS (Incubating Great Engineering Minds)</b> was at (Pu5) in the Science Lab to recruit our Gr 10 learners. If learners are interested in the programme and meet the requirements, they are entered into a 7 year programme from Grade 11.	<b>Extra-mural science programme</b>	
Pu5E(4)Doc2b	School website: Home	Wednesday 3 March was the launch of <b>EXPO at (Public school 5) for 2021</b> . The aim is to upgrade two previous Physics Projects and to start new projects to assist with food security, purification of water and also a project or two in the category of Mathematics.	<b>Science Expo Food security Water purification</b>	
Pu5E(4)Doc2c	School website: Home	In September 2017, a company called Oracle donated compost and spinach seeds in exchange for our electronic waste. The environmental club, Eco Warriors, assisted by Mrs C and our American Intern Ms B, was very excited about this new project.	<b>Recycling Food garden</b>	

Pu5E(4)Doc4	Facebook entry 6/12/17	<p>Learners were groomed the necessary skills to plant and maintain the garden.</p> <p>This whole new experience for the learners brought about a new hype for (Pu5), especially when the new crop arrived. Spinach was then sold to buy more seeds.</p> <p>Our aim is to let these vegetables become a tremendous contribution for our Feeding Scheme, the only problem is that we require seeds in order to expand our vegetable garden.'</p>		
Pu5E(4)Doc5	Facebook entry 18/11/22 Facebook entry 12/9/22	<p>Our CLIMATOLOGY CLUB made us proud today at the SCIENCE TO GO certification ceremony. They presented their findings in terms of rain, humidity, windspeed, wind direction and atmospheric pressure.</p> <p>Our grade 8 and grade 9 learners were very excited when they wrote their FIRST NATURAL SCIENCE OLYMPIAD on Thursday. Olympiads enhance Analytical reasoning abilities in children and helps them with problem solving</p>	<p><b>Climatology club</b></p> <p><b>Natural Science Olympiad</b></p>	
	School website: Gallery -			

Pu1E(5)Doc5a	Social Awareness 2019	<b>BlackFridayAgainstAbuse-</b>	<b>Justice Human rights Equality</b>	Here, some schools definitely focus more on initiatives toward fostering justice and human rights, so it depends on the school management and their attitude. Although there is only one Afrikaans-speaking school being investigated, the absence of any such initiatives does make one wonder
Pu1E(5)Doc5b	School website: Gallery Social Awareness 11/2019	<b>Let-us-Break-the-Silence</b> (Domestic violence)	<b>Justice Human rights Equality</b>	
Pu1E(5)Doc5c	School website: Gallery Social Awareness 7/2019	<b>RedLipstickDay-to-empower-women-everywhere-01</b> (Survivors of sexual violence)	<b>Gender equality</b>	
Pu1E(5)Doc5d	School website: Gallery Social awareness 3/2019	<b>TEAL-RIBBONS-01</b> (violence against women and children)	<b>Gender equality</b>	
Pu2D(5)Doc2	Facebook entry 26/10/21	On the 23rd of October (Girl X), Grade 9 learner at (Pu2), launched the #HELPAGIRLOUT project. It is	<b>Gender equality Human rights</b>	

Pu4E(5)Doc4	School website: Newsletter 22/6/22	<p>an initiative that seeks to empower young girls. (She) was inspired by her parents' upbringing which proved that you have the power to change your life. The event was held at the Limakatso Entertainment centre where four talented guest speakers addressed a group of girls from surrounding schools. The subject matter stretched from Gender Based Violence, Substance Abuse to what it means to be a girl and how to see your worth within society.</p> <p>She may also need your assistance in organising her Mandela Day service activity. We hope this will be a meaningful experience for you all, and thank you in advance for your assistance.</p>	<p><b>Community service activity</b></p>	
Pu5E(4)Doc2a	School website: Home	<p>We were very honoured to have THAAKIRA MOHAMED, self-published author of the book MERCY, addressing our learners in our newly REVAMPED LIBRARY. She is a social justice activist, motivational speaker and integral life coach. Our girls were in awe as she detailed her journey from abuse to healing. In so doing, she inspired them to rise up against any form of GBV and to become warriors. GIRLS were reminded that "queens can turn pain into power". What an inspiring and empowering day for our girls. We wish Mrs Mahomed and her family all the best on their journey of upliftment.'</p>	<p><b>Social justice Gender equality</b></p>	
Pu5E(4)Doc2d	School website: Home	<p><b>Sylvester Funani</b>, motivational speaker, Regional Manager NEDBANK, Life Coach, addressing Grade 12 boys/young men on how to treat women with respect and not as an object to be abused.</p>	<p><b>Social justice Gender equality</b></p>	

				<p>No evidence found of things like green energy, water-saving projects green buildings etc. at any of the public schools.</p> <p>Could be that for private schools it is an aspect of marketing, whereas public schools just do what they can with the finances available without making a fuss about it.</p>

Coding process: Open coding: Private Schools

Doc	Source	Actual Text	Open Coding	Analytical memo

Pr1E(C)Doc1	Website: Welcome page	<p>'Our facilities, teaching techniques and curriculum are designed to provide pupils with the skills, attitudes and knowledge they will need to be <b>global citizens of the future.</b>'</p> <p>'the philosophy of teaching that increasingly allows <b>pupils to learn anytime, anywhere.</b>'</p> <p>'rigorous academic programme focusing on <b>innovative learning experiences and holistic education</b>'</p> <p><b>'Commitment to Sustainability</b></p> <p>Round Square Explorers make a commitment to manage their use and application of the earth's resources to live within its means for the benefit of future generations.'</p>	<p><b>Global citizens of the future</b></p> <p><b>Life-long learning</b></p> <p><b>Innovative learning experiences</b></p> <p><b>Holistic education</b></p> <p><b>Commitment to sustainability</b></p>	<p>Although, only one school has specific reference to sustainability in the Round square programme that they follow, there are many references to ESD principles, skills, attitudes and competencies, such as:</p> <ul style="list-style-type: none"> <li>- Skills, attitudes and knowledge to be global citizens of the future</li> <li>- life-long and independent learning</li> <li>- innovative learning experiences</li> <li>- practical skills flowing from academic input</li> <li>- Social responsibilities</li> <li>- forward-thinking</li> <li>- transformative word-view</li> <li>- critical, independent problem-solvers</li> <li>- creative, innovative thinkers</li> <li>- Adaptability to change</li> <li>- Ethical</li> <li>- caring thought-leaders</li> <li>- citizens of local and global communities</li> </ul>
Pr2E(R)Doc1	Website: High school Academics	<p>'Students are encouraged to stretch their intellectual wings – whatever their scope – and <b>develop their skills in research and independent study.</b></p> <p>Once we have inspired academic excellence, student <b>'hands' are able to DO</b> all that has been taught. Then our young men and women can become what they repeatedly <b>do</b>: confident, self-assured adults who have purpose'</p>	<p><b>Life-long learning</b></p> <p><b>Independent study</b></p> <p><b>Project-based learning</b></p>	<p>- forward-thinking</p> <p>- transformative word-view</p> <p>- critical, independent problem-solvers</p> <p>- creative, innovative thinkers</p> <p>- Adaptability to change</p> <p>- Ethical</p> <p>- caring thought-leaders</p> <p>- citizens of local and global communities</p>

Pr3E(R)Doc5a	School website: PDF Statement of faith p.2	what <b>innovative education</b> should look like... They need a safe and inclusive environment where they can <b>fearlessly follow their curiosity and learn through discovery, critical thinking and even risking failure.</b>	<b>Innovative education</b> <b>Learn through discovery</b> <b>Critical thinking</b> <b>Risking failure</b>	<ul style="list-style-type: none"> <li>- fearlessly following curiosity</li> <li>- learning through discovery</li> <li>- risking failure</li> <li>- impacting society</li> <li>- project-based learning</li> <li>- collaboration</li> <li>- use of future-focused technology</li> <li>- applying learned material in a creative manner</li> <li>- 21<sup>st</sup> century skills</li> </ul> <p>All 5 private schools made some reference to ESD principles and seem to have a much broader ESD language than public schools</p>
Pr3E(R)Doc5C	School website PDF Statement of faith Annexure B	<ul style="list-style-type: none"> <li>• seeking to be good stewards of God's creation in the way we <b>utilise natural resources and care for the environment.</b></li> </ul> <p>Service Enabling students to <b>develop skills and values to live in peace and harmony, seeking justice for all with a priority for the poor, powerless and persecuted and marginalised.</b></p>	<b>Stewards of natural resources</b> <b>Care of environment</b> <b>Seeking justice</b> <b>Peace</b>	
Pr4E(R)Doc1	Website: Welcome page	'We define <b>quality education</b> as schooling that inspires learners to <b>impact society.</b> We <b>serve the Department of Education</b> through the modelling of <b>best practice.</b> '	<b>Impact society</b>  <b>Project-based learning</b> <b>21<sup>st</sup> century skills</b> <b>Creativity</b> <b>Collaboration</b> <b>Independent thinking</b> <b>Future-focused technology</b>	
Pr5E(C)Doc1	Website: Welcome page	'Our approach to education...includes <b>project-based learning.</b> This helps to provide learners with <b>21st-century skills,</b> such as <b>creativity, collaboration and independent thinking.</b> Learners in our schools also learn to work with <b>future-focused technology</b> by using <b>tablets in class....</b> or as an additional tool to <b>support research and collaboration</b>		

		<p>among learners.</p> <p>Though many people believe that the <b>IEB</b> is a separate curriculum, it is actually a set of external examinations of international standard written by learners at the end of Grade 12... the unique questioning method in these examinations. This method requires great skill in <b>applying learned material in a creative manner</b> – another example of the way in which we provide learners with <b>21st-century skills.</b></p>		
Pr1E(C)Doc1	School Website: Our facilities	'offers a rigorous academic programme focusing on <b>innovative learning experiences</b> '	<b>Innovative learning experiences</b>	Many more references to innovative learning experiences producing innovative problem-solvers; collaboration; inventiveness/innovation; commitment to sustainability; teamwork; creativity; imagination; critical thinking, holistic forward-thinking and project-based learning than what was found at the public schools
Pr1E(C)Doc4	School website: More than a school, an experience	'committed to produce <b>innovative problem solvers</b> who can lead with purpose in all spheres of life'	<b>Innovative problem-solvers</b>	
Pr1E(C)Doc5	School website: Round Square	'the delivery of a relevant curriculum aimed at producing <b>innovative problem solvers</b> '	<b>Connection Collaboration Inventiveness Problem-solving Sense of responsibility Appreciation of diversity</b>	
Pr1E(C)Doc9	Roundsquare.org/inquisitiveness	'which is operational on no less than six continents and strives to foster <b>connection and collaboration</b> between member schools. "They are inquisitiveness, tenacity, courage, compassion, <b>inventiveness, problem-solving, self-awareness, sense of responsibility, appreciation of diversity,</b>		

Pr1E(C)Doc14	round square.org/inventiveness	<p><b>commitment to sustainability, communication and teamwork.</b> They are willing and able to ask and answer questions in a <b>collaborative and co-constructive</b> environment.</p> <p>‘Round Square Explorers develop new ideas and demonstrate <b>divergent thinking, creativity, imagination and innovation</b>’</p>	<p><b>Commitment to sustainability</b>  <b>Communication</b>  <b>Teamwork</b>  <b>Collaboration</b></p> <p><b>Divergent thinking</b>  <b>Creativity</b>  <b>Imagination</b>  <b>Innovation</b></p> <p><b>Creative problem-solving</b></p>	
Pr1E(C)Doc11	roundsquare.org/ability to solve problems	<p>‘Round Square Explorers discover the ability and confidence to think clearly and <b>creatively to tackle a problem</b> in a focused way and find the best possible solution(s) given the circumstances.’</p>	<p><b>Eco-school</b></p>	
Pr2E(R)Doc3	School website: Green achievements	(Private School 2) is an <b>Eco-School</b> . This means that we actively try to reduce our carbon footprint		

Pr3E(R)Doc1	School website: Welcome page	'Our aim is to develop girls who are <b>forward thinking, transformative in their world-view and critical, independent problem-solvers;</b> '	<b>Forward-thinking Transformative worldview Critical, independent problem-solvers Creative, innovative thinkers Fearlessly following curiosity Learn through discovery Critical thinking Risking failure Innovative education</b>
Pr3E(R)Doc2	School website: Leadership – message by Chairperson of the Council	"We will continue to ensure that we place into the <b>world creative, innovative thinkers</b> who are adaptable, ethical and progressive and are primed to succeed.'	<b>Critical thinkers Fearlessly following curiosity Learn through discovery Critical thinking Risking failure Innovative education</b>
Pr3E(R)Doc3	School website: Welcome from the Head	' <b>fearlessly follow their curiosity and learn through discovery, critical thinking</b> and even <b>risking failure.</b> ' 'We prioritise staying abreast of the latest research on what <b>innovative education</b> should look like'	<b>Critical thinkers Fearlessly following curiosity Learn through discovery Critical thinking Risking failure Innovative education</b>
Pr3E(R)Doc4	School website: What sets us apart	'producing an alumnae who are independent <b>critical thinkers</b> '	<b>Critical thinkers</b>
Pr3E(R)Doc8	School website: Learning	'...we believe in providing an education that results in the <b>holistic development</b> of an individual intellectually, physically and spiritually. We equip our girls for careers that have yet to be discovered.'	<b>Holistic development Careers of the future</b>
Pr4D(R)Doc3	School website: Service	'From Waste to Glory: <b>Finding innovative ways</b> to use household recycling waste' - EARTH without ART is EH: Serving the community through art and <b>creative thinking</b>	<b>Innovative waste recycling Creative thinking</b>
Pr4D(R)Doc4	School website: PDF	'SHFT – Your Learning A <b>CREATIVE</b>	<b>Creative new</b>

	document: SHFT info	<p><b>NEW WAY OF REMOTE LEARNING.</b> As the best practises and educational models from SHFT betters an enhances (Private school4), so also the ethos, adventure, <b>creativity</b> and pursuit of contribution influences SHFT.</p> <p>SHFT changes how you learn, by: - requiring <b>ownership and responsibility for the learning experience</b> - encouraging a <b>problem solving mind-set</b> - freeing up time for learners to engage in other educational initiatives - <b>cultivating a culture of networking and co-operative learning</b> - facilitating the personal development of learners through completing the Nation Builder Award.</p> <p>Nation Builder Award: The shift in education is not reserved only to the sphere of academics, but we have an opportunity to reinvent and facilitate the manner in which learners develop and contribute. What if we could create a platform for personal development that would help a learner navigate his or her way through life by building valuable and real relationships while <b>contributing to society</b>? This is where we are heading. Now. A data-driven development platform that:</p> <ul style="list-style-type: none"> <li>• Encourages leadership development</li> <li>• Links life coaches/mentors and learners meaningfully</li> <li>• Enables <b>community involvement</b> and tracks personal growth in key areas such as: - Mentorship Input / One-on-ones with</li> </ul>	<p><b>remote learning</b></p> <p><b>Creativity</b></p> <p><b>Owning the learning experience</b></p> <p><b>Problem-solving mind-set</b></p> <p><b>Networking</b></p> <p><b>Co-operative learning</b></p> <p><b>Contributing to society</b></p> <p><b>Community involvement</b></p>	
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		<p>vetted mentors - Active lifestyle / Club or private participation in sport - Community Service / Through our partner organisations nationwide - Skills Development / Additional short courses through accredited providers - <b>Project Management / Research, plan and launch own service projects.</b></p>	<p><b>Project management</b>  <b>Research, planning and launch of own service projects</b></p> <p><b>Innovative thinking</b></p>	
Pr5E(C)Doc1	School website: Welcome page	<p>‘Learners in our small class sizes are taught to <b>think innovatively</b>, express their ideas and take charge of their own lives’  ‘, includes <b>project-based learning</b>. This helps to provide learners with <b>21st-century skills</b>, such as <b>creativity, collaboration and independent thinking</b>. Learners in our schools also learn to work with <b>future-focused</b> technology by using tablets in class.’  ‘...or as an additional tool to support research and <b>collaboration</b> among learners.’  ‘Our school also has several clubs, such as photography and journalism, which allow learners with similar interests to build relationships, develop <b>21st-century skills</b> and <b>collaborate</b> in <b>various projects</b>.’  ‘...our enhanced curriculum approach places great emphasis on <b>problem-solving and individual thinking</b>.’</p>	<p><b>Project-based learning</b>  <b>21<sup>st</sup>-century skills</b>  <b>Creativity</b>  <b>Collaboration</b>  <b>Independent thinking</b>  <b>Future-focused technology and skills</b>  <b>Problem-solving</b></p> <p><b>Applying learned</b></p>	

Pr5E(C)Doc2	School webpage: Our models	This method requires great skill in <b>applying learned material in a creative manner</b> – another example of the way in which we provide learners with <b>21st-century skills</b>	<b>material in creative ways</b> <b>21<sup>st</sup>-century skills</b>	
Pr1E(C)Doc2	School webpage: Our facilities	<p>‘Staff members guide our wilderness excursions, which include backpacking, rock climbing, paddling, cycling and exploring the unique geography, history and ecology of the gorges and mountains in this area’</p> <p>‘Our extensive <b>outdoor programme</b> is designed not only to expose our pupils to our unique environment but also is intended to develop:</p> <ul style="list-style-type: none"> <li>• <b>Service Learning and Teamwork</b></li> <li>• <b>Wilderness Skills and Outdoor Leadership</b></li> <li>• <b>Environmental Awareness and Ethics</b></li> </ul> <p>‘<b>Children are at the centre</b> of all school activities’</p>	<p><b>Outdoor programmes</b></p> <p><b>Service learning</b> <b>Teamwork</b> <b>Outdoor leadership</b> <b>Environmental awareness and ethics</b> <b>Child-centred</b></p>	In private schools there seem to be more opportunities to take learners out of the classroom to give them practical experiences of the learning content: outdoor education; visiting speakers, outing opportunities; single-focus days on specific subjects, combined with excursions and integrated ITC seem to be the norm, rather than the exception.
Pr1E(C)Doc6	Roundsquare.com /discovermore	‘Dubbed the <b>Round Square Discoveries</b> , they capture and describe the attitudes, attributes, skills and values developed and explored by students as they engage with the Round Square IDEALS. Now an integral part of the Round Square Discovery Framework, our extensive outdoor programme is designed not only	<b>Round Square discoveries</b>	

		<p>'to expose our pupils to our unique environment but also is intended to develop:</p> <ul style="list-style-type: none"> <li>• Service Learning and Teamwork</li> <li>• Wilderness Skills and Outdoor Leadership</li> <li>• Environmental Awareness and Ethics'</li> </ul>		
Pr2E(R)Doc1b	School website: High school academics	<p>'(Private school 2) students benefit from a <b><i>diverse programme of visiting speakers and a wide range of outing opportunities</i></b> that range from water testing in the nearby valley to 'Big 5' game drives and weekend hikes'</p>	<p><b>Visiting speakers</b> <b>Outing opportunities</b></p>	



Pr4D(R)Doc5	School website: PDF document: SHFT info	<p>becoming an integral part of our modern-day society. Learners need to be skilled in its use for learning, leisure and academic work.</p> <p>Therefore, we believe <b>that ICT deserves to be integrated with our learning/teaching curriculum</b></p> <p><b>SHFT releases you to do the unthinkable. Start a business, travel abroad, invent something remarkable, serve a community in need, develop an app or change the world, all while exceeding your own academic goals.</b></p>	<p><b>Future-focused learning</b>  <b>Collaboration</b>  <b>Innovative thinking</b></p> <p><b>Use of modern technology such as robotics, drones, virtual reality, 3D printers</b></p>	
Pr5E(C)Doc1	School website: Welcome	<p>our learners benefit from <b>future-focused learning by using tablets in class</b> rather than textbooks, or as an additional tool to <b>support research and collaboration among learners.</b></p> <p>Learners in our small class sizes <b>are taught to think innovatively, express their ideas and take charge of their own lives, to be valued members of the community.'</b></p> <p><b>'We offer IT equipped with modern technology, Robotics, Drones, Virtual reality, 3D printers and so much more...'</b></p>		
Pr5E(C)Doc4	Facebook entry 22/12/22			

Pr1E(C)Doc2	School website: Our facilities	<p>Our Inter-house outdoor education day and the annual Van Stadens River Race are highlights of our calendar that, once again, add to the unique educational experience on offer.</p> <ul style="list-style-type: none"> <li>• <b>Vegetable Garden</b></li> <li>• <b>Outdoor Classrooms and many natural outdoor learning venues</b></li> </ul>	<p><b>Vegetable garden Outdoor classrooms</b></p>	<p>Outdoor education: Pr1, Pr2, Pr3, Pr4</p> <p>Eco club activities including:</p> <ul style="list-style-type: none"> <li>- vegetable garden/ Farming God's way: Pr1, Pr3</li> <li>- beach clean-up/litter pick-up Pr2, Pr3, Pr5</li> <li>- recycling initiatives: Pr2, Pr4</li> <li>- eradication of alien vegetation: Pr2</li> <li>- Eco-brick project: Pr3</li> </ul>
Pr1E(C)Doc3	School website: College Outdoor Education	<p>This unique <b>21 DAY rite of passage</b> is explicitly designed for 16-year-olds to grow through MIND, BODY, and SPIRIT. It removes them from technology and connects them with the outdoors, themselves, and their peers. Not only do they develop outdoor and academic skills, but their social development is also accelerated through a focus on traditional virtues and a values-based programme of honesty, respect, compassion, and understanding</p>	<p><b>21-Day outdoor education experience</b></p>	<p>President's award: students set themselves challenges in the four sections of the Award: community service, adventurous journey, skills development and physical recreation: Pr3</p>
Pr1E(C)Doc5	School website: Round Square	<p><b>The Round Square educational approach</b> encompasses character education and experiential learning, and the application of the Round Square Discovery Framework, which incorporates six themes, namely <b>Internationalism, Democracy, Environmental Stewardship, Adventure, Leadership and Service.</b></p>	<p><b>Round-Square educational approach with focus on: Internationalism, Democracy, Environmental Stewardship, Adventure,</b></p>	<p>- Community outreaches: Pr3, P4, Pr5</p> <p>Robotics: Pr5</p> <p>There seems to be more diverse activities as well as some whole-school academic extension activities at the private schools</p>

Pr2E(R)Doc1b	School website: High school academics	'students benefit from a <b><i>diverse programme</i></b> of visiting speakers and a wide range of <b>outing opportunities</b> that range from water testing in the nearby valley to 'Big 5' game drives and weekend hikes, and even accompanied overseas travel to thrilling places like London's West End for drama buffs. Opportunities for international school exchange further broaden (Pr2) horizons.	<b>Leadership Service.</b>	Outdoor education is a part of the private school curriculum
Pr2E(R)Doc4	School website: Ecology club	The aim of the <b>Eco club</b> is to ensure that the school is environmentally responsible and educated in all things eco-friendly. It falls under the service forum. The Eco Club arranges various environmental activities. A beach clean-up is planned annually and other projects might include recycling initiatives or the eradication of alien vegetation. The club wants to encourage students to be environmentally aware and to learn life-long habits of living sustainably and in a manner which cares for the environment.	<b>Visiting speakers Outing opportunities</b>  <b>Eco club - environmental</b>	School gardens is something that is done at both public and private schools.

Pr3E(R)Doc9	School website: Community Engagement	<p><b>The President's Award</b>, part of the international Duke of Edinburgh's Award, focuses on <b>empowerment of youth through individual challenges and development</b>. The programme encourages every young person to reflect upon their interests, abilities and ambitions and set themselves challenges in the four sections of the Award: <b>community service, adventurous journey, skills development and physical recreation</b>.</p>	<p><b>responsibility</b></p> <ul style="list-style-type: none"> <li>- environmental education</li> <li>- beach clean-up</li> <li>- recycling</li> <li>-eradication of alien vegetation</li> </ul>
Pr3E(R)Doc11	School newsletter: Rev's reflections 11/11/22	<p><b>Farming God's Way Harvesting</b></p> <p>"One of the visions of the founders of this farming programme is <b>to teach others to effectively produce their own vegetables</b> even on a small patch of ground.</p> <p>At the start of the project, some girls could not see its importance at all. They felt like we are just adding something unnecessary to their busy lifestyle. But soon they discovered that while the project would not be carrying marks or the like, they were <b>learning a lifelong skill</b>. It was heart-warming to see them determined to harvest even on those cold Friday mornings during winter.</p> <p>Grade 8s have now taken over the project. They have all planted seeds and seedlings and are busy watering them daily. The project has also been extended to other grades and currently six girls have prepared their gardens too. They will soon be identifying a <b>children's home or Old Age home in the community who will be receiving vegetables</b> on a weekly basis. At the end of the year, they will then show that community how to produce their own vegetables before moving onto another community/family.</p>	<p><b>The President's Award</b></p> <ul style="list-style-type: none"> <li>- empowerment of youth</li> <li>- community service</li> </ul> <p><b>Farming God's Way</b></p> <ul style="list-style-type: none"> <li>- food gardens</li> <li>- community outreach</li> <li>-poverty reduction</li> <li>-life-long learning</li> </ul>
Pr3E(R)Doc15	School newsletter: Environmental club 22/7/22	<p style="text-align: center;">127</p> <p><b>The Environmental Portfolio</b> organized a litter pickup in the Makhanda area on June 5 in honour of Environmental Day. The goal is to attempt to repair and clean</p>	

Pr1E(C)Doc2	School website: Our facilities	Children are at the centre of all school activities. This is evident as pupils play music for assemblies, organise an annual Earth Hour concert and <b>initiate community service programmes where teachers offer support and guidance. Pupil initiatives are encouraged</b> and supported by the Trust, management, parents and teachers	<b>Responsibility</b>	Public schools have more 'once-off' projects whereas private schools seem to encourage community engagement where learners take the lead with teachers supporting
Pr2E(R)Doc3	School website: Green achievements	This means that we <b>actively try to reduce our carbon footprint</b> – the negative impact we and our school have on the environment. One of the ways we do this is <b>to plant indigenous trees</b> and shrubs like spekboom trees beautify our grounds and create tranquillity and shade. They also help to reduce the levels of carbon dioxide and monoxide in the atmosphere. (Pr2) has been awarded a Silver Certificate on completion of two successful years in the <b>ECO-SCHOOLS PROGRAMME</b> . Members of the Eco-Club are steering this programme and have achieved the Gold Award, thereby allowing the school to fly the Green Eco flag. Green themes include: <ul style="list-style-type: none"> <li>• <b>Resource use:</b> recycling of tins, plastic, glass, cardboard, tetra packs and paper etc. The aim is to extend the recycling programme into learners' homes. Cutting down</li> </ul>	<b>Environmental protection</b> - Resource use - Biodiversity - Healthy living	

Pr3E(R)Doc5a	School website: PDF Statement of faith p.2	<p>on the use of paper, electricity and water also fall under this theme.</p> <ul style="list-style-type: none"> <li>• <b>Biodiversity:</b> removal of alien vegetation and the planting of indigenous trees as well as conservation of wildlife.</li> <li>• <b>Healthy living:</b> sources of pollution, good eating habits and the art of reading food labels, exercise and ways of dealing with stress are some of the topics in this theme.</li> </ul> <p>(Pr3) will strive to facilitate <b>access to education</b> at the school via its bursary and scholarship programmes, prioritise the school's commitment to its <b>community engagement programme</b></p>	<b>Equal rights Responsibility</b>	
Pr3E(R)Doc9	School website: Community Engagement	<p>We believe that <b>community service</b> is an important part of a girl's formation and at (Pr3) we have an expansive community service programme. (We) subscribe to the President's Award programme, the purpose of which is to encourage young people to become active within their communities.</p>	<b>Responsibility</b>	
Pr3E(R)Doc12	School website: Newsletters – Black history month 4/2/22	<p>This year we will be celebrating Black History Month in a way that focuses on our local history. The reason we observe Black History Month is to <b>tell untold stories</b></p>	<b>Justice Human rights</b>	

		<p>about who we are, and the greatness of the many Black people in history who were never written about. In a way, Black History month is to shine light on and focus on history that was not recognized in the past. At (Pr3) we believe it is important for all of us to learn about our local history. Some of the history we are looking into is not even found on the internet...This Black History Month will have a local focus because we have hidden facts and figures, and this is the month to learn about them. Watch the space as we find out more about our history in Makhanda and surrounding areas.</p>		

Pr1(E(C)Doc4	School website: More than a school, an experience	<p>The magnificent 365-acre <b>eco estate</b> in the Eastern Cape... (Pr1) has recovered well since a fire devastated the campus in 2017. The school was rebuilt with purpose and provided us with modern and <b>sustainable infrastructure</b>.</p> <p>In a bid to have one of the <b>lowest carbon footprints</b> per educated child, (Pr1) has launched <b>Eco Smart</b>, a <b>programme</b> designed to reduce its impact on the environment and reduce energy consumption costs by 30%... “The environment is an essential part of our school’s ethos, how we educate our children, and for our school sports,” remarks .. Headmaster X “Eco Smart is designed to preserve our surroundings and reduce our environmental impact, and it’s something that all pupils and staff are excited about being part of.”</p>	<p><b>Eco estate</b></p> <p><b>Sustainable infrastructure</b></p> <p><b>Low carbon-footprint</b></p> <p><b>Eco Smart programme</b></p>	<p>Evidence of environmental sustainability found for all 5 private schools, whether in design, teaching, reducing their carbon footprint, implementing water-saving principles or building methods. Principles are not only implemented but also consciously taught.</p>
Pr1E(C)Doc16	Newspaper article: News24 – 23/8/2018	<p>In the year since wildfires devastated large parts of the campus, (Pr1) has used the incident as an opportunity to modernise the school and rebuild it with <b>future energy efficient objectives</b> in mind.</p> <p>A school-wide initiative, the programme also promotes environmental awareness to ensure a sustainable future for the school. “Eco Smart is our way of living up to our environmental responsibility. We want to create an <b>eco-conscious mind-set</b> amongst staff, pupils and their families</p>	<p><b>Future energy efficient objectives</b></p> <p><b>Eco-conscious mind-set</b></p>	

		<p>to influence future generations. We want to inspire by using a progressive approach to modern education. Eco Smart has the potential to position (Pr1) as a shining example of eco awareness and sustainable schooling.”</p> <p>Managed by a dedicated team, under the direction of (Pr1) alumnus, Mr Z, Eco Smart is being rolled out in phases, with each focusing on one aspect of sustainability, namely energy generation, energy efficiency, <b>water security and recycling.</b></p> <p>The vision is for it to become a true eco-school, placing it among a select few schools that have committed to sustainable education.</p> <p>“We’re proud of our reputation and our standing within the education system, and hope that our eco-credentials become another attractive aspect to our offering,”</p>	<p><b>Water security</b></p> <p><b>Recycling</b></p>	
Pr2E(R)Doc3	School website: Green Achievements	(Pr2) is an <b>Eco-School</b> . This means that we actively try to <b>reduce our carbon footprint</b> – the negative impact we and our school have on the environment.	<p><b>Eco-School</b></p> <p><b>Reduction of carbon footprint</b></p> <p><b>Water management</b></p>	



Pr4D(R)Doc7	School website: Eco campus	<p>For the past 7 years through our outreach programs we have laid numerous foundations around the world... but today we are laying our own.</p> <p>The foundation for the first of 10 <u>log homes</u> that will be used as student and teacher accommodation on our new (Pr4) <b>Eco Campus Development</b> has been prepared and inspected...</p> <p>For the past three years we have been working ceaselessly on the development plans for the (Pr4) Eco Campus Development - a multi-functional facility that will:</p> <ul style="list-style-type: none"> <li>• ensure the growth and continuance of (Pr4)</li> <li>• create an environment that will facilitate the improvement of students' academic and leadership standards</li> <li>• build an educational society that will inspire and promote</li> <li>• future growth in the Kouga Region</li> <li>• create a unique and positive learning environment accessible to all communities</li> <li>• fashion a milieu in which children will learn to act responsibly towards their environment</li> <li>• utilize the facilities and initiate host programs that will empower the community.'</li> </ul>	<b>Environmental sustainability awareness journey</b>	

Pr5E(C)Doc6	ENVIRONMENT, SOCIAL AND GOVERNANCE REPORT Introduction p.3 2021:	<p>(Pr5) recognised the value of Environment, Social and Governance ('ESG') alignment and embarked on an <b>environmental sustainability awareness journey</b> during 2017 and 2018. (Pr5) has submitted climate change data to the CDP since 2019.</p> <p>(Pr5) is committed to improving its environmental sustainability performance through:</p> <ul style="list-style-type: none"> <li>• fostering a culture of sustainability and <b>reducing (Pr5)'s ecological footprint</b>;</li> <li>• <b>incorporating principles and the understanding of sustainability into teaching, student learning, research, consultancy and community engagement</b>; and</li> <li>• incorporating environmental sustainability key performance metrics alongside other key performance indicators of (Pr5).</li> </ul>	<p><b>Reducing ecological footprint</b>  <b>Incorporation of sustainability into teaching, learning, research and consultancy</b></p>	
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## ANNEXURE B: OPEN TO AXIAL CODES

### Coding process: Open coding to axial coding: public and private schools

Open codes	Analytical memo: Public schools	Analytical memo: Private schools	Theme/Axial code
<b>PUBLIC SCHOOLS</b>  <b>Life skills</b> <b>Good citizenship</b> <b>Human dignity and tolerance</b> <b>Diverse democratic society</b> <b>Love of knowledge/learning</b> <b>Building for future generations</b> <b>Innovative teaching</b> <b>Pro-actively embracing challenges</b> <b>Holistic development</b>	<p>4 Quintile 5 schools (schools that charge school fees) were investigated as well as 1 Quintile 4 school. Quintile 4 schools receive a Norms and Standards allocation of approximately R 803 per learner from the National Department of Basic Education. Quintile 5 schools receive R 277 per learner. The shortfall for running the school effectively is supplemented by school fees. Quintile 1 – 3 schools are mostly in areas deemed to be poverty-stricken and do not charge school fees. They receive a Norms and Standards allocation of R1602 per child. Some Quintile 4 and 5 schools are, however not necessarily in areas where all parents have an above-average income and struggle to make ends meet with many parents applying for exemption of school fees, so budgets are tight and geared towards essentials. Unfortunately, very few Quintile 1-3 schools have websites or</p>	<p>Although, only one school has specific reference to sustainability in the Round square programme that they follow, there are many references to ESD principles, skills, attitudes and competencies, such as:</p> <ul style="list-style-type: none"> <li>- Skills, attitudes and knowledge to be global citizens of the future</li> <li>- life-long and independent learning</li> <li>- innovative learning experiences</li> <li>- practical skills flowing from academic input</li> <li>- Social responsibilities</li> <li>- forward-thinking</li> <li>- transformative word-view</li> <li>- critical, independent problem-solvers</li> <li>- creative, innovative thinkers</li> <li>- Adaptability to change</li> <li>- Ethical</li> <li>- caring thought-leaders</li> <li>- citizens of local and global communities</li> <li>- fearlessly following curiosity</li> <li>- learning through discovery</li> <li>- risking failure</li> </ul>	<b>ESD and SD referrals in mission and vision statements</b>

<p><b>PRIVATE SCHOOLS</b></p> <p><b>Global citizens of the future</b>  <b>Life-long learning</b>  <b>Innovative learning experiences</b>  <b>Holistic education</b>  <b>Commitment to sustainability</b>  <b>Life-long learning</b>  <b>Independent study</b>  <b>Project-based learning</b>  <b>Innovative education</b>  <b>Learn through discovery</b>  <b>Critical thinking</b>  <b>Risking failure</b>  <b>Stewards of natural resources</b>  <b>Care of environment</b>  <b>Seeking justice</b>  <b>Peace</b>  <b>Impact society</b>  <b>Project-based learning</b>  <b>21st-century skills</b>  <b>Creativity</b>  <b>Collaboration</b>  <b>Independent thinking</b>  <b>Future-focused technology</b></p>	<p>properly run social media accounts were data could be found.</p> <p>None of the public schools specifically mentioned ESD or SD in their motto, vision or mission, but some sustainability terminology was used, such as:</p> <ul style="list-style-type: none"> <li>- future challenges</li> <li>- good citizenship</li> <li>- contribution to country's growth and prosperity</li> <li>- promoting human dignity and tolerance</li> <li>- life-long learning</li> <li>- building for the future</li> <li>- innovative teaching</li> <li>- pro-actively embracing challenges</li> <li>- holistic development</li> </ul> <p>Two of the public schools under investigation made no reference of SD or ESD</p>	<ul style="list-style-type: none"> <li>- impacting society</li> <li>- project-based learning</li> <li>- collaboration</li> <li>- use of future-focused technology</li> <li>- applying learned material in a creative manner</li> <li>- 21st-century skills</li> </ul> <p>All 5 private schools made some reference to ESD principles and seem to have a much broader ESD language than public schools.</p>	
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<p><b>PUBLIC SCHOOLS</b></p> <p><b>Innovative education</b>  <b>Creative citizens</b>  <b>Recycling</b>  <b>Waste management</b>  <b>Creativity</b>  <b>Innovative teaching</b>  <b>Pro-actively embracing challenges</b>  <b>Holistic development</b>  <b>Collaboration</b>  <b>Collaboration</b>  <b>Analytical reasoning</b>  <b>Problem-solving skills</b></p>	<p>No mention of ecology, social fairness, economic viability, sensitivity to local culture, or project-based learning mentioned in any of the data for public schools</p> <p>One reference to analytical reasoning in the context of an Olympiad.</p> <p>Some reference to creativity and innovation (3 schools)</p> <p>Two mentions of collaboration between schools or school and university.</p>	<p><b>Sustainability-related terminology</b></p> <p>Many more references to innovative learning experiences producing innovative problem-solvers; collaboration; inventiveness/innovation; commitment to sustainability; teamwork; creativity; imagination; critical thinking, holistic forward-thinking and project-based learning than what was found at the public schools</p>
<p><b>PRIVATE SCHOOLS</b></p> <p><b>Innovative learning experiences</b>  <b>Innovative problem-solvers</b>  <b>Connection</b>  <b>Collaboration</b>  <b>Inventiveness</b>  <b>Problem-solving</b>  <b>Sense of responsibility</b>  <b>Appreciation of diversity</b>  <b>Commitment to sustainability</b>  <b>Communication</b>  <b>Teamwork</b>  <b>Collaboration</b>  <b>Divergent thinking</b></p>	<p>One mention of holistic development and problem-solving</p> <p>Lack of reference to these competencies is worrying – is it not actively promoted in public schools or just not spoken about?</p>	

<p> <b>Creativity</b>  <b>Imagination</b>  <b>Innovation</b>  <b>Creative problem-solving</b>  <b>Eco-school</b>  <b>Forward-thinking</b>  <b>Transformative world-view</b>  <b>Critical, independent problem-solvers</b>  <b>Creative, innovative thinkers</b>  <b>Fearlessly following curiosity</b>  <b>Learn through discovery</b>  <b>Critical thinking</b>  <b>Risking failure</b>  <b>Innovative education</b>  <b>Critical thinkers</b>  <b>Holistic development</b>  <b>Careers of the future</b>  <b>Innovative waste recycling</b>  <b>Creative thinking</b>  <b>Creative new remote learning</b>  <b>Creativity</b>  <b>Owning the learning experience</b>  <b>Problem-solving mind-set</b>  <b>Networking</b>  <b>Co-operative learning</b>  <b>Contributing to society</b>  <b>Community involvement</b>  <b>Project management</b>  <b>Research, planning and launch of own service projects</b>  <b>Innovative thinking</b>  <b>Project-based learning</b> </p>			
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<b>21st-century skills</b> <b>Creativity</b> <b>Collaboration</b> <b>Independent thinking</b> <b>Future-focused technology and skills</b> <b>Problem-solving</b> <b>Applying learned material in creative ways</b> <b>21st-century skills</b>			
<b>PUBLIC SCHOOLS</b>  <b>Enrichment facilities</b> <b>Innovative educational adventures – academic field trips –</b> <b>Use of technology – interactive white boards</b> <b>Project-based tasks with focus on environment</b> <b>Online tutoring</b> <b>e-learning tablets</b> <b>learning at own pace</b> <b>theme-based lessons</b> <b>Coding</b> <b>Project-based education</b>	<p>Most of the public schools studied offer computer studies (CAT &amp; IT) and learners have access to computers, but none of the schools seem to integrate IT as part of their pedagogy except for Pu3, who mentions interactive whiteboards and Pu5 who has launched an online tutoring programme for gr 8 learners using sponsored tablets.</p> <p>There is some evidence of project-based and independent learning and some practical exposure in some subjects.  No evidence of real-life problem-</p>	<p>In private schools there seem to be more opportunities to take learners out of the classroom to give them practical experiences of the learning content: outdoor education; visiting speakers, outing opportunities; single-focus days on specific subjects, combined with excursions and integrated ITC seem to be the norm, rather than the exception.</p>	<b>Pedagogies promoting SD competencies and attitudes</b>

<p><b>PRIVATE SCHOOLS</b></p> <p>Outdoor programmes  Service learning  Teamwork  Outdoor leadership  Environmental awareness and ethics  Child-centred  Round Square discoveries  Visiting speakers  Outing opportunities  Single focus days with practical application of knowledge gained in class  E-learning  Integrated ICT  Future-focused learning  Collaboration  Innovative thinking  Use of modern technology such as robotics, drones, virtual reality, 3D printers</p>	<p>solving</p> <p>Are pedagogies in public schools still stuck in the previous century or are finances the problem? Maybe the curriculum and school system?</p>		
<p><b>PUBLIC SCHOOLS</b></p> <p>Environmental clean-up projects  Recycling  Waste management  Land Service club  Food gardens  Creative projects</p>	<p><u>Academic extension:</u>  - Science expos and Sci fest develop critical thinking and problem-solving skills</p> <p>-Collaboration with an Engineering company opens doors for learners to develop 21<sup>st</sup> century skills</p>	<p>Outdoor education: Pr1, Pr2, Pr3, Pr4</p> <p>Eco club activities including:  - vegetable garden/ Farming  God's way: Pr1, Pr3  - beach clean-up/litter pick-up  Pr2, Pr3, Pr5  - recycling initiatives: Pr2,Pr4</p>	<p><b>Academic extension and extra-mural activities aimed at SD</b></p>

<p><b>Eco-club</b>  <b>Critical analysis of environmental challenges</b>  <b>Ethical and responsible behaviour</b>  <b>Implementation of solutions</b>  <b>Environmental clean-up</b>  <b>Interact clubs</b>  <b>Community service</b>  <b>Moot Court</b>  <b>Human Rights</b>  <b>Equality</b>  <b>Fairness</b>  <b>Eco Club</b>  <b>Scientific testing and trials</b>  <b>Environmental clean-up</b>  <b>Planting of indigenous trees</b>  <b>Eco Club</b>  <b>Food garden</b>  <b>Diversity &amp; Inclusivity committee</b>  <b>Science Expo</b>  <b>Science Fest</b>  <b>Extra-mural science programme</b>  <b>Science Expo</b>  <b>Food security</b>  <b>Water purification</b>  <b>Recycling</b>  <b>Food garden</b>  <b>Climatology club</b>  <b>Natural Science Olympiad</b></p>	<p><u>Extra-mural activities:</u>  -Interact clubs focused on community service (citizenship)   -Land service/Eco clubs focused on the environment, recycling, waste management, planting food gardens and indigenous plants, creativity, problem-solving.   -Moot court develops critical thinking, ethical awareness and an awareness of human rights/democracy   -Diversity and Inclusivity committee promotes rights and justice for all.   -Climatology club expose learners to practical climate issues   Most ESD related activities in public schools seem to fall into the extra-curricular activity category. Most of it is eco- and environment related. This means that only a few interested learners are exposed to it</p>	<p>- eradication of alien vegetation: Pr2  - Eco-brick project: Pr3   President's award: students set themselves challenges in the four sections of the Award: community service, adventurous journey, skills development and physical recreation: Pr3   - Community outreaches: Pr3, P4, Pr5   Robotics: Pr5  There seems to be more diverse activities as well as some whole-school academic extension activities at the private schools   Outdoor education is a part of the private school curriculum   School gardens is something that is done at both public and private schools</p>	
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**PRIVATE SCHOOLS**

and it is driven by one or two passionate educators

- Vegetable garden
- Outdoor classrooms
- 21-Day outdoor education experience
- Round-Square educational approach with focus on:  
Internationalism, Democracy, Environmental Stewardship, Adventure, Leadership Service.
- Visiting speakers
- Outing opportunities
- Eco club
  - environmental responsibility
  - environmental education
  - beach clean-up
  - recycling
  - eradication of alien vegetation
- The President's Award
  - empowerment of youth
  - community service
- Farming God's Way
  - food gardens
  - community outreach
  - poverty reduction
  - life-long learning
- Environmental Portfolio:
  - litter pick-up
  - recycling
  - preservation of environment
- 21-Day Fish River journey for

<p>Gr 10s</p> <ul style="list-style-type: none"> <li>- awareness of consumer mentality</li> <li>- future-thinking</li> </ul> <p>Eco-brick project</p> <ul style="list-style-type: none"> <li>- recycling</li> </ul> <p>LED groups</p> <ul style="list-style-type: none"> <li>- outdoor activities</li> <li>- community outreach</li> </ul> <p>From Waste to Glory</p> <ul style="list-style-type: none"> <li>- recycling</li> <li>- innovation</li> </ul> <p>EARTH without ART is EH</p> <ul style="list-style-type: none"> <li>- community service</li> <li>- Creativity</li> </ul> <p>Heart Core</p> <ul style="list-style-type: none"> <li>- Enabling the disabled</li> </ul> <p>Student Leadership initiatives focusing on the environment</p> <p>Clubs</p> <ul style="list-style-type: none"> <li>- development of 21st-century skills</li> <li>-collaboration</li> </ul> <p>Community outreach programmes</p> <p>Robotics club</p> <p>Beach clean-up initiatives</p>			
<p><b>PUBLIC SCHOOLS</b></p> <p>Justice</p> <p>Human rights</p> <p>Equality</p>	<p>Here, some schools definitely focus more on initiatives toward fostering justice and human rights, so it depends on the school management and their</p>	<p>Public schools have more ‘once-off’ projects whereas private schools seem to encourage community engagement where learners take the lead with</p>	<p><b>Projects, initiatives and community engagements relating to SD</b></p>

<p><b>Justice</b>  <b>Human rights</b>  <b>Equality</b>  <b>Gender equality</b>  <b>Gender equality</b>  <b>Gender equality</b>  <b>Human rights</b>  <b>Community service activity</b>  <b>Social justice</b>  <b>Gender equality</b>  <b>Social justice</b>  <b>Gender equality</b></p>	<p>attitude. Although there is only one Afrikaans-speaking school being investigated, the absence of any such initiatives does stand out.</p>	<p>teachers supporting and become responsible citizens</p>	
<p><b>PRIVATE SCHOOLS</b></p> <p><b>Responsibility</b>  <b>Environmental protection</b>  - Resource use  - Biodiversity  - Healthy living  <b>Equal rights</b>  <b>Responsibility</b>  <b>Responsibility</b>  <b>Justice</b>  <b>Human rights</b></p>			
<p><b>PUBLIC SCHOOLS</b></p> <p><b>No evidence</b></p>	<p>No evidence found of things like green energy, water-saving projects green buildings etc. at any of the public schools.</p>	<p>Evidence of environmental sustainability found for all 5 private schools, whether in design, teaching, reducing their</p>	<p><b>Adopting sustainability related principles on the school grounds</b></p>

<p><b>PRIVATE SCHOOLS</b></p> <p><b>Eco estate</b>  <b>Sustainable infrastructure</b>  <b>Low carbon-footprint</b>  <b>Eco Smart programme</b>  <b>Future energy efficient objectives</b>  <b>Eco-conscious mind-set</b>  <b>Water security</b>  <b>Recycling</b>  <b>Eco-School</b>  <b>Reduction of carbon footprint</b>  <b>Water management plan</b>  <b>Eco Campus development</b>  <b>Environmental sustainability awareness journey</b>  <b>Reducing ecological footprint</b>  <b>Incorporation of sustainability into teaching, learning, research and consultancy</b></p>	<p>Could be that for private schools it is an aspect of marketing, whereas public schools just do what they can with the finances available without making a fuss about it.</p>	<p>carbon footprint, implementing water-saving principles or building methods. Principles are not only implemented but also consciously taught.</p>	
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# ANNEXURE C: ETHICS APPROVAL LETTER



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Senate Committee for Research Ethics  
Tel: 018 299-4949  
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## ETHICS APPROVAL LETTER OF STUDY

Based on approval by the Faculty of Education Research Ethics Committee (EduREC) on 27/05/2021, this committee hereby approves your study as indicated below. This implies that the North-West University Senate Committee for Research Ethics (NWU-SCRE) grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

<b>Study title: Education for Sustainable Development in Easter Cape secondary schools</b>																
<b>Study Leader/Supervisor (Principal Investigator)/Researcher: Prof EK Niemczyk</b>																
<b>Student / Team: M Basson (MEd student – 11119373), Dr ZL de Beer</b>																
<b>Ethics number:</b>	<b>N</b>	<b>W</b>	<b>U</b>	<b>-</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>6</b>	<b>-</b>	<b>2</b>	<b>0</b>	<b>-</b>	<b>A</b>	<b>2</b>	
	Institution				Study Number						Year				Status	
	<u>Status:</u> S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation															
<b>Application Type: Single Study</b>																
<b>Commencement date: 27/05/2021</b>	<b>Risk:</b>	<b>No Risk</b>														
<b>Expiry date: 27/05/2022</b>																
<b>Approval of the study is initially provided for a year, after which continuation of the study is dependent on receipt and review of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation.</b>																

Special in process conditions of the research for approval (if applicable):

<p><b>General conditions:</b></p> <p>While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:</p> <ul style="list-style-type: none"><li>• The study leader/supervisor/principal investigator/researcher must report in the prescribed format to the EduREC:<ul style="list-style-type: none"><li>- annually (or as otherwise requested) on the monitoring of the study, whereby a letter of continuation will be provided, and upon completion of the study; and</li><li>- without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.</li></ul></li><li>• The approval applies strictly to the proposal as stipulated in the application form. Should any amendments to the proposal be deemed necessary during the course of the study, the study leader/researcher must apply for approval of these amendments at the EduREC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.</li><li>• Annually a number of studies may be randomly selected for an external audit.</li><li>• The date of approval indicates the first date that the study may be started.</li><li>• In the interest of ethical responsibility, the NWU-SCRC and EduREC reserves the right to:<ul style="list-style-type: none"><li>- request access to any information or data at any time during the course or after completion of the study;</li><li>- to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process;</li></ul></li></ul>
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- *withdraw or postpone approval if:*
  - *any unethical principles or practices of the study are revealed or suspected;*
  - *it becomes apparent that any relevant information was withheld from the EduREC or that information has been false or misrepresented;*
  - *submission of the annual (or otherwise stipulated) monitoring report, the required amendments, or reporting of adverse events or incidents was not done in a timely manner and accurately; and / or*
  - *new institutional rules, national legislation or international conventions deem it necessary.*

The EduREC would like to remain at your service as scientist and researcher, and wishes you well with your study. Please do not hesitate to contact the EduREC or the NWU-SCRE for any further enquiries or requests for assistance.

Yours sincerely



Prof JAK Olivier  
Chairperson NWU Faculty of Education Research Ethics Committee

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8 November 2018

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5 December 2018

File reference: 9.1.5.4.2

## ANNEXURE D: LANGUAGE EDITING

# Dr. JACKIE DE VOS

**Academic copy editor / Akademiese teksredakteur**

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Jackie de Vos

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## EDITING

27 March 2023

To whom it may concern

This letter serves to confirm that the following thesis was edited:

### **Education for Sustainable Development in Eastern Cape secondary schools**

The onus is on the client(s) to work through the proposed track changes and to accept or reject proposed changes. Clients might amend/re-work or add to the content during and after the editing process. Clients should make certain that all sources/references have been cited and that they are satisfied with the final copy before submitting.

# ANNEXURE E: TURNITIN REPORT

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