Cape Peninsula
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POSSIBILITIES FOR DEMOCRATIC CITIZENSHIP IN THE NATURAL SCIENCE CURRICULUM AND ASSESSMENT POLICY STATEMENT

By

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DECLARATION

I, Reyanah Manuel, declare that the contents of this dissertation/thesis represent my own unaided work, and that the dissertation/thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

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ABSTRACT

The purpose of this study is to analyse the Curriculum and Assessment Policy Statement (CAPS) document within the subject Natural Sciences (NS) (senior phase including Grades 7 to 9) and to explore whether the implementation of this document can possibly engender democratic citizenship within the classroom.

An analysis of the sub-headings used within the NS CAPS document will be undertaken. These are the process, skills and specific aims. A brief study of the education policies, namely the Outcomes Based Education (OBE), the Revised National Curriculum Statement (RNCS) for Grades R-9 and the National Curriculum Statement (NCS) Grades 10-12 will be undertaken. The purpose of this analysis is to present an argument behind the implementation of the CAPS document as part of the National Curriculum Statement.

As the research is document-based a qualitative research methodology will be implemented in which document analysis will serve as the research methodology. This method will implement critical discourse analysis as the lens used to analyse the data gathered. The NS policy document will be reviewed to explore whether the aims, skills and processes have the capacity to provide learners with opportunities to think critically and to engender democratic citizenship.

ACKNOWLEDGEMENTS

DEDICATION

To a great scholar and an avid supporter of me pushing the boundaries of what I thought I was capable of achieving, my father Mogamat Sedick Manuel, may you be blessed with Paradise and share in my success from afar.

ABBREVIATIONS

CDA   **-**   **Critical Discourse Analysis**

CAPS   **-**   **Curriculum Assessment Policy Statement**

DoE   **-**   **Department of Education**

NCS   **-**   **National Curriculum Statement**

NS   **-**   **Natural Sciences**

OBE   **-**   **Outcomes Based Education**

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CHAPTER 1: INTRODUCTION

1.1 Introduction

Kelley (1995: xiv) states that education is a powerful tool. It creates the foundation on which a democratic society can be built. The question is whether present educational policies in South Africa have the capacity to engender democratic citizens.

For South Africans to make the transition from an oppressed people to that of a democratic populace, its citizens needed to be educated on how to interact and live side by side with each other and not be threatened by the "otherness of others" (Benhabib, 2002:25,130) or a "we and others" sentiment as posited by Young (2002:5). For democratic interaction to proceed, I contend, South African educational policies should be geared towards empowering learners with the knowledge to contribute towards the growth and development of the economy and political democracy of South Africa. Martha Nussbaum (2009:12) posits that to ensure that our youth are educated in all aspects of what it means to be democratic citizens and to actively be afforded the space to practise the values of democracy, the fostering of a democratic culture in our country must take place at school level.

For this study, an analysis of the Natural Sciences Curriculum and Assessment Policy Statement document (CAPS) will be undertaken to explore whether this specific national policy document cultivates democratic practices in the classroom that engenders democratic citizenship. The focus is therefore on the subject Natural Sciences. Natural Science taught at school level is a systematic way of looking for explanations and connecting ideas by making use of methods of inquiry and investigation. These methods include teaching learners how to formulate hypotheses and how to design and carry out experiments to test the hypotheses being investigated. The results of the experiments are then carefully examined and debated, before they are accepted as valid (DoE, 2011a:8).

In practice, this teaches learners how to make informed and well researched decisions. Furthermore, through the learning of Natural Sciences, our youth will be empowered with the "scientific mentality towards problem solving in society" as suggested by van Niekerk (2004:12-13).

1.2 Background

The purpose of undertaking this study is to ascertain whether the implementation of the process skills set out in the Natural Sciences Curriculum and Assessment Policy Statement engenders democratic citizenship. These process skills have been formulated to teach the learner how in reality to practically apply the knowledge taught. There are several process skills listed. For the purpose of this study, these process skills have been collated under three headings. The first process skill teaches the learner how to access information and later, recall this information to make meaningful decisions by applying this knowledge when making decisions or carrying out a practical task (DoE, 2011a:10). The second process skill listed, is learning how to investigate various phenomena in the world and then draw conclusions from what is learnt or make suggestions on how to improve these phenomena or apply this knowledge in everyday contexts (DoE, 2011a:11). The third process skill has been incorporated into the previous two skills. Here, the learner's scientific language skills in reading and writing are developed (DoE, 2011a:12). This third process skill is vital to the previous two skills as it is through the development of the learner's reading skills that understanding may be drawn from, thus allowing learners to articulate their thoughts orally in a discussion with peers. The application of these three skills, occur in the Natural Sciences classroom during lessons being taught where learners will be given the opportunity to actively practice and engage with the information given whereby drawing conclusions from it through discussion with peers and recording these findings or applying itin practical investigation. Through this interaction, learners engaging with each other may experience instances of disagreement. It is this disagreement which influences the outcome of the discussion as it may be positive or negative. How learners react to positive or negative feedback in terms of respecting the basic human rights and liberties of their peers, is what is of interest to this study. In other words how learners interact and collaborate with each other is relevant to this study.

1.3 Purpose of the study

The purpose of this research is to analyse the discourse used in the Curriculum and Assessment Policy Statement (CAPS) document within the subject Natural Sciences in the senior phase, specifically in Grade 7. This study explores whether the implementation of this policy document can possibly engender democratic citizenship in the Grade 7, Natural Sciences classroom. Biesta and Lawy (2006:64-65) argue that although citizenship education

is important, too much emphasis is being placed on it within the schooling environment. They posit that a shift must be made from research, policy and practice claiming that teaching should be geared towards the learners gaining knowledge of democratic citizenship, as well as how learners can become actively involved with the promotion of democracy during lessons.

Waghid (2003: i) argues that education policy frameworks are not a sufficient vehicle by itself to transform the education system of South Africa. I concur with Waghid's stance that it is not enough to accept the dictates of a policy as given. It is vital that the discourse of the policy is interrogated as social and cultural context impinges upon policy. The aim of this study is to ascertain whether Natural Sciences as a subject could seemingly contribute towards the advancement of the South African nation and thus allow South Africa to be a contender in the global arena (Conezio & French, 2002:13; de Jager, Reeler, Oberholzer & Landman: 1985, 27-28).More specifically, I shall explore whether the Natural Sciences CAPS document can facilitate the promotion of democratic citizenship focussing on learners at Grade 7 level.

1.3.1 This study proposes to answer the following question

i. Does the language used in the Natural Sciences subject in the Grade 7 senior phase of the Curriculum and Assessment Policies Statement (CAPS) document, engender democratic citizenship?

ii. What is the impact of 'power' relations in the NS CAPS document?

iii. Are deliberative democratic skills evident in the NS CAPS document?

1.4 Theoretical framework

The language used in the Natural Science curriculum (Grade 7) within the CAPS document will be analysed in this study. The qualitative research methodology within a post-positivist paradigm will be used as a lens to create a framework in which this study will be conducted.

Qualitative research is concerned with the process, rather than the outcome of the study. This research methodology furnishes the study with the needed tools to view and analyse the world within an interpretive and naturalistic approach (Bogan & KnoppBiklen, 2007:6; Denzin & Lincoln, 2011:3-4). Critical discourse analysis will be used as the method in which

the data will be analysed. Different "lay discourses" (Peräkylä & Ruusuvuori, 2011:531) will be analysed. These lay discourses include: 1) Policy documents, namely the Curriculum and Assessment Policy Statement (CAPS) document within the subject Natural Sciences (senior phase including Grades 7 to 9), 2)The Outcomes Based Education (OBE)policy document, 3) The National Curriculum Statement (NCS) Grades 10-12, 4) Committee reports,5) Government gazettes, namely the Manifesto on values, education and democracy, 6) the 47th International Conference on Education and7)The Constitution of the Republic of South Africa, various books and journal articles pertaining to critical discourse theory, related to democracy, citizenship education and democratic citizenship.

The post-positivistic research paradigm will be the lens through which this study will be analysed. It assumes that there are various methods of drawing conclusions from a study other than using the scientific method. Rather than testing a hypothesis, post-positivistic research generates hypotheses through inductive reasoning. Instead of trying to explain how something operates, scholars analyse their research to understand why people or the object of study act or react in the manner they do. This method aims at revealing power relationships and structures which they operate in (McGregor & Murnane, 2010:422-423).

The data gathered from this study will be present in units, and synthesised for the purpose of finding representative patterns. These patterns will then be relocated in the various lay discourses where they will be interpreted to give clarity to the problem formulated within the research question (Bogan & KnoppBiklen, 2007:159). The data will then be analysed by making use of critical discourse analyses (CDA).

To ensure clarity to the purpose of the analyses being done in this study, the following concepts will be analysed: education, community and environment, globalisation, citizenship; democracy and democratic citizenship. Each concept may directly or indirectly influence the teaching and learning as well as the teacher's and learner's context; therefore it is vital that these concepts are discussed.

1.4.1 Education

Dewey (2005:12) states that etymologically, the word education refers to the process of leading or bringing up. When a process is followed, there is a set outcome for what the end product will be. The end product starts off as a raw material and through manipulation by

means of shaping and forming this material; the desired end product may be produced. In an educational setting, the raw material represents the child, the process the act of teaching and the desired end product a socially acceptable individual.

Carr (2003:4) confirms that that the concept of education can be interpreted as being pluralistic as it incorporates a number of concepts which is simplified to fit under the general umbrella concept of "education".

Education is the acquisition of "skills, capacities, dispositions or qualities not previously possessed" (Carr, 2003:4). Furthermore Carr (2003:4) posits that education presupposes that someone or more bodies are learning what is being taught (Carr, 2003:4). Thus, education must have a purpose. This purpose may refer largely to the subject being taught on a micro level as well as what the individual will learn or acquire from the subject taught. There is a direct link between education and teaching (Carr, 2003:4). Carr (2003:4) maintains that the context, site and social environment in which the education institution is situated in has caused some discussion as well (Carr, 2003:4). These suppositions support the importance of fostering a school environment where learners are taught how to interact with others. In doing so, individual contexts and experiences of learners are taken into consideration and an environment of acceptance and respect is created.

In modern civil societies, there is a presumption that the site of the school has some bearing on the quality of education being offered there. However, some credence may be given to this presumption if the apartheid regime which operated in South Africa can be referred to. Education as a vehicle for change in South Africa has been one of strife and victory during the pre-apartheid era. Bantu education allowed learners to be taught only that which would ensure their ability to work. Very little of this education was spent on the development of academic, moral and social nuances. The education received was aimed at preparing them to become the labour force of the nation (Giliomee, 2012:67). People of different races were segregated in race-based schools where the so called "black" schools were underfunded and poorly resourced. The site of these schools was often in rural or township areas which further ensured that the infrastructure of the buildings was poor and not conducive to appreciate teaching and learning (Giliomee, 2012:72).

The aims to develop desirable qualities in people such as values and skills to better themselves so that they may form part of a society or community therefore contributes to shaping a democratic society as well (Hirst & Peters, 1970:19).

At a communal level, schools may act as the gathering place for members of the community. Citizens live together and interact on various personal and interpersonal levels and in doing so, form a community. Within a schooling context, this community is referred to as a "living community" (Mandela, 2002: x) as [the school] is not only a space consisting of walls and benches but a meeting place of minds where all role-players have information or experiences which may be passed on to others, making the role-players "partners" in relation to each other (Mandela, 2002: x).

Although the school itself may not be democratic in its administrative practices, it should promote an environment where learners are encouraged and taught how to interact with others. This social interaction is continued by the parents of the learners and is according to Marshall (1950), a result of the social heritage shared by individuals, which in turn allow them to claim membership in that society as citizens (Marshall, 1950:8).

By having their children attend the neighbourhood school, members of the community interact with each other on a social level when they gather for school or community meetings (Schoeman, 2006:140). They become accustomed to the presence of one another and this may foster a sense of belonging and acceptance amongst adults and by extension, their children. This "partnership" mentioned by President Mandela (2002: x) is what binds individuals together and give rise to the formation of a "community" as well as underpins the philosophical notion of 'ubuntu'. The concept of "community" is discussed later on in this chapter.

Marshall's (1950) claims that what makes a "community" and the importance of this community is education. Marshall (1950) posits that a community is created when the "social rights" of individuals are "rooted in membership to the village or community" (Marshall, 1950:13). These social rights refer to the three components of what he (1950), regards as being citizenship. These are civil, political and social elements (Marshall, 1950:10). These elements will be discussed further in this chapter under Citizenship.

Indabawa (1997:190) further posits that education serves the needs of a specific society or community at a specific time. Its purpose is to bring about social changes as envisioned by the ruling body or hierarchy of a country or state. These changes are what are presumed to be desirable traits which may allow the citizen a freedom when interacting within the society that they live or work in. These desirable qualities are required by the individual to lead a fulfilling life however with education aims to develop the individual's knowledge and understanding as well which presents an educated citizen of society.

Education gives rise to an educated person who is armed with knowledge and understanding about something. With the advancement of globalisation, the need for an educated society and workforce is more apparent. Not only are school graduates expected to be knowledgeable, but also be versed in practical skills to be part of this workforce who contribute to society. The responsibility is to ensure that learners are adequately taught and prepared to join the workforce when leaving school. Therefore, the concept of "education" cannot be defined. Its definition must be treated as something which is fluid and geared towards what is needed (Hirst& Peters, 1970:24-25) to drive an economy.

1.4.2 Virtues

MacIntyre (2007:122) posits that virtue as a concept hold different meanings at different times in history. The ancient Greek or Athenian man recognised virtues as being that which he possessed by knowing who he was. By knowing his status, he was fully aware of his role and responsibilities towards his community. At the same time he knew what was owed to him by the other occupants of his community as well as what those who held an elevated status owed him (MacIntyre, 2007:122). In ancient civilizations, a man's virtue was judged by his actions. How he reacted in a particular situation would serve as judgment to the strength of his character. If he was a virtuous man, of strong character, his actions would manifest this in his public and personal life (MacIntyre, 2007:122).

MacIntyre (2007:133) alludes to ancient Greek or Athenian man's virtues as being that thought processes, which provided him with the guidelines to pass judgement and make independent decisions about what is considered as right or wrong. These thought processes have been developed by the community he lived in, as it was here where he was taught how to question what was right and wrong and what was considered to be virtues of friendship, courage, self-restraint, wisdom and justice (MacIntyre, 2007:134).

From a more contemporary perspective, McLaughlin (1992) posits that the virtues which encompass a citizen can be construed in both the "minimal and maximal view" (McLaughlin, 1992:236-237). In a "minimal view", the virtues required by a citizen include personal attributes such as "loyalty and responsibility of self and to others" (McLaughlin, 1992:236-237). The "minimal view" refers to the citizen's public awareness and sense of helpfulness and responsibility towards his fellow citizens by his own personal volition.

The "maximal view" focussed on the collective, and not just his immediate neighbours or fellow citizens taking into consideration how his political or personal actions may impact on the greater community must be considered before he takes action (McLaughlin, 1992:236-237).

As stated by both MacIntyre (2007) and McLaughlin (1992), man's virtues or actions are developed by the community he lives in, as it is the people with whom he interacts with on a daily basis who leave a lasting impression on his thought processes. It is with this understanding that the concept of "community" will now be discussed.

1.4.3 Community
The concept of "community" may be used in various contexts with each having its own theoretical philosophies underpinning them.

Eraut, (2002:1) uses an ecological system as an example to highlight the concept of "community" in nature. Ecology, he states, is comprised of various life forms living in particular habitats of varying sizes and physical conditions. When this context of "community" is applied to a learning community, clear similarities can be found in what happens in nature as well as what happens in reality. He defines the learning community as one which comprises of various people doing various jobs and interacting with one another in the workplace (habitat).

"Community" as a concept may be defined as a group of individuals occupying a specific space (Eraut, 2002:4). These individuals share commonalities such as religion, language, social or economic backgrounds or any other denoting factor which will group them together. Occupying the "community" may be made out of choice or due to.

A community and a society both need a space to occupy. A community needs a specific space which satisfies specific needs. Society is found everywhere where exist.

1.4.4 Environment

The concept, "environment", refers to more than just the spaces occupied by a community or a society. An "environment" is that condition which "promotes or hinder; stimulate or inhibit the characteristic activities" of an individual; it is necessary to the survival of the person (Dewey, 2005:13-14).

Aristotle (Jowett, 1885:8-9) quotes that "the man who lives wholly detached from others must be either an angel or a devil… a society is born and grown, but also made". He posits that each man is born with the ability to interact in a political sphere. The quality of his arguments will determine his station in the political arena. If he is able to sway his audience to favour his arguments, he has the ability to set the course of action taken by those in power through the legislation of his arguments. Thus, he will determine the quality of the space he as well as his community lives in.

As mentioned, a community is a group of people occupying a specific space and a society denotes all people at large. What these groupings of people have in common is that they involve people who live and interact with each other within a specified space (a community) or within a greater range (a society). This association is known as the social environment (Dewey, 2005:14).

A social environment is dependent on the rules and norms of the society he lives in. Socially acceptable norms form part of any society or community's background. Any actions carried out by the individual can be met with approval, condemnation and expectations of the rest of the community as the community could be affected by the actions and outcomes of one of their members. Within an association or social environment, these actions can be viewed as being beneficial, or as an act of hostility which could comprise the integrity or safety of the community or society being affected (Dewey, 2005:14).

Socially unacceptable behaviour can also be nurtured within an environment- consciously or unconsciously. In an environment where the young are taught what is believed as being acceptable and everything else as being strange or foreign, the child may develop a thought

process which does not take socially acceptable influences into account when making decisions. This supposition is aligned with Dewey (2005:20-21) where he posits that conscious and deliberate teaching allows the child to think freely and help to develop their conscious thought and seek meaning before making decisions.

The concept of "environment" within a community or society has three main functions according to Dewey (2005:27): 1) simplifying and ordering the dispositions of its members which it wants to develop; 2) purifying and idealizing the existing social customs and to 3) create a balanced environment by which the young can be influenced.

The concept "environment" will be used when referring to schools as well as the social environment where interaction takes place for the purpose of this study. The classroom, as a social environment where democratic citizenship could be engendered, will shape this study. The methodology employed by the educator when planning Natural Sciences lessons whilst incorporating the guidelines for nurturing democratic citizenship through teaching and learning to occur, will be shaped by the application of the aims and process skills in the Natural Sciences CAPS document as a focus for this study.

The researcher argues that there is a clear link between knowledge of civil education, active citizenship and the maintenance of democracy in a school environment. Schools are accessible to all school going children. These guidelines allow and promote social interaction between learners but how it is manifested through the curriculum for Natural Sciences is of importance for this study.

It is therefore in the classroom where democratic practises ought to be effected that learners learn how to interact with others, gain knowledge and learn how to model the values and moral obligations through observing their educators (Schoeman, 2006:140). This draws one to a discussion on globalisation and the impact it has on the macro, meso and micro levels of education and education practises.

1.4.5 Globalisation

Generally, "globalisation" is perceived as being a set of changes which is constructed by state policymakers to garner support for political change to occur (Burbules & Torres, 2000:2). Policy makers also stand opposed to those parties or organisations which are against these

changes, or wish to have these changes occur according to their dictates. The proposed changes brought to the floor by policymakers, are the result of more powerful bodies, with "powerful voices" (Burbules & Torres, 2000:2) who are capable of enforcing said changes.

The International Monetary Fund (IMF) and the World Bank are examples of "powerful voices". Here, "power" refers to the aims and objectives (Foucault, 1978:94) envisioned by the IMF for their subsidiaries. These organisations have implemented measures to ensure the compliance of states. The state has minimal powers in denying the needs of two such powerful bodies and must comply with a set of global rules not of their making, should they want to continue being recipients of these bodies support (Burbules & Torres, 2000:2; Fairclough, 2010: 455). Educating individuals, costs the state money. The money spent on education by the government can be seen as an investment in the country's future participants'.

Burbules and Torres (2000:3) claim that the education system of the country adequately prepares its learners to become contributing members in their society, ensuring that the money spent on educational practices, was not a waste of resources

Globalisation has an impact on the schooling environment in that it transforms the method in which school policy and curricula are being drafted and implemented at an international level (Burbules & Torres, 2000:4). The purpose of these changes is to prepare school-going learners to be cognizant of what is happening in their local, regional, national and international communities. In doing so, they may be more prepared to join the global workforce on completing their schooling career or be better prepared to make career choices based on the needs of the economy and their skills ability.

1.4.6 Power
The concept of "power" has various connotations. According to Foucault (1978:87) power is tolerable because it hides within itself. "Power" does not seek to be secretive as it cannot be affective as a mechanism for change when it cannot be observed. The language used when representing this power, does not aim at achieving fear or dominance, but is wielded in such a way that it is perceived as being acceptable by others (Foucault,1978:86-87).What is perceived as being powerful is a condition of the entity practising it. An analysis of the concept of "power" has resulted in three themes: a) power must be understood in the context

it is being used, b) power is a process which has a chain reaction in terms of where it is applied and c) what the purpose of the effect which power will have on the players involved (Foucault, 1978:92-93). For the purpose of this study, the concept of "power" is centred within a language context where the language used within the NS CAPS document is analysed as a possible site of struggle. "Power" in relation to the language used in the NS CAPS document is that it authoritative. It prescribes much of what the educator must do in the classroom. A power relation also exists between educator and learner. The power of the document cascades down as the educator does not have much freedom and thus this affects those learners who would want to explore by asking questions for further study as the CAPS document, in terms of time allocation, does not allow for this.

1.5 The flow of this study will be as follows

Chapter 1 introduces the purpose of this study and discusses the rationale behind the study. The main question as well as sub questions which this study proposes to answer is included here as well. The background and the theoretical framework employed are discussed as well.

This leads to **Chapter 2** where a conceptual framework of the literature review is given. The purpose of this conceptual framework is to unpack the influences that a curriculum may have on the engenderment of a democratic society.

For learners to fully understand the rights and responsibilities afforded to them in a democratic society, they should be furnished with the required social skills to with peers. The philosophy regarding education is discussed in this chapter as it creates a scaffold for the purpose that education has in society and for this study. This scaffolding process continues as, will be discussed and its validity unpacked for the purpose of this study. Interaction is only possible if subjects are planned allowing dialogue to occur in a manner that upholds the values of democracy and citizenship within the classroom.

The methodology and method and utilised to conduct the analysis will be discussed in **Chapter 3**, where the Natural Sciences Curriculum and Assessment Policy Statement document will be reviewed through employing the qualitative research methodology. Qualitative research as a methodology is employed when the researcher is concerned with the

processes involved within the research which may prove or disprove their predetermined hypothesis, rather than the outcome of the study.

Research methodology furnishes the researcher with the needed tools to view and analyse how their study may or may not have any implications in the greater community (Bogan & KnoppBiklen, 2007:6; Denzin & Lincoln, 2011:3-4).

A post-positivist paradigm will be used as the lens to create a framework in which this study will be conducted. A post-positivist paradigm provides researchers with the tools through which data can be analysed by means of the interpretations gained from analysing the events or actions which have resulted in the data (Hitchcock & Hughes, 1989:16).

The data which will be analysed is the language used in the Natural Sciences curriculum (Grade 7) within the CAPS document. The purpose of this analysis is to study the wording of this document and the power it has on the practical implementation of Natural Sciences lessons within a Grade 7 classroom. It aims at uncovering whether or not the Natural Science CAPS document allows for critical democratic teachings to be fostered within lessons being taught. However, it must be noted that these teachings should occur as part of the Natural Sciences lesson, and not as a separate entity.

The rationale behind teaching democratic citizenship lessons across the curriculum is to ensure that a democratic curriculum is presented. Under the previous apartheid regime, learners of so-called inferior races, which included learners of black, coloured and Indian ethnicities were schooled and taught within a specified divided framework. The purpose of this rigid framework was to ensure that these learners were adequately educated and literate so as to ensure that they would be a viable workforce on leaving school (Giliomee, 2012:67). The government's spending on so called Bantu education, was limited, as was the support given to the educators and principal of these schools. The rationale by the apartheid government was based on the fear of having a well educated workforce who could possibly become politicised should appropriate employment and fringe benefits not be given to them (Giliomee, 2012:67).

A plethora of educational documents have been promulgated which serve as hard evidence of said commitment to improving the South African Curriculum (Waghid, 2003: i). Included in

this chapter, are brief overviews of the educational policy documents which have been implemented since the 1994 democratic elections in South Africa. These commitments to active social change, by way of education, have resulted in the Curriculum Assessment Policy Statement document.

The Outcomes Based Education (OBE) is touched on as a platform to provide the rationale for the change from one curriculum to the current CAPS system. The major difference between the Natural Sciences Outcomes Based Education and the Natural Science Curriculum and Assessment Policy Statement document is that the CAPS Natural Sciences document provides the educator with the process skills which are needed for the attainment of skills required by citizens to actively contribute towards the advancements of society. The Natural Science CAPS document aims at providing learners with various opportunities to make sense of the ideas that they have (about nature) and encourages learners to ask questions that could lead to further research and investigation (DoE, 2011b:10).

For the analysis of the Natural Sciences CAPS document to, critical discourse analysis will be used as the method in which the data will be analysed. Critical discourse analysis (CDA) is concerned with interrogating the discourse used in documents or the discourse used in speaking. It proposes to uncover social abuse and inequalities resulting of this exploitation by those entities in power (Laclau, 2007:541; VanDijk, 2001: 352). The impact of the abolishment of the Apartheid regime on education is discussed and how this abolishment underpinned the Government's commitment to moving away from its segregationist and racially divided political past, to a democratic society.

In **Chapter 4**, the application of Natural Sciences lessons in engendering democratic citizenship is discussed. Here, the 'behaviours' associated with the premise of what it means to be democratic is reviewed. The application of the Natural Sciences CAPS document in lessons is discussed. Critical Discourse Analysis is employed as a lens in analysing the use of discourse within the Natural Sciences CAPS document by various individuals or groups who include policy makers, educators practising the guidelines set out in the policy document and ultimately the learners who are being taught.

The purpose of critical discourse analysis (CDA) as the method to critique the Natural Sciences CAPS document and to uncover unequal discursive practises within the text, which

may lead to the oppression of social groups, will be discussed. The results of this analysis can then be used as a vehicle for social change to occur (Jørgensen & Phillips, 2002:63-64). The scope of this study will take place within the Grade 7 teaching band in the Senior Phase level.

The purpose of these lessons is aimed at teaching learners the practical skills and values to become contributing, democratic-practicing members of society. However, realising these aims and purposes as suggested by the Natural Sciences CAPS document is discussed in **Chapter 5** where recommendations for the way forward as well the implications for education for all South Africans are discussed. This chapter explores how the results of this analysis may aid educators in preparing lessons and modelling what it means to apply democratic education within the pedagogy of teaching and learning in the Natural Sciences classroom.

The importance of teaching democratic citizenship within the schooling curriculum environment will be unpacked. How learners are taught the practices associated with being a democratic citizen are analysed in terms of the development of the process skills stated in the Natural Sciences CAPS document

It is with this brief synopsis of the overall study that Chapter 2 where a conceptual framework of the literature review of the concepts within the Natural Sciences CAPS document, will next be presented.

CHAPTER 2: CONCEPTUAL FRAMEWORK OF THE LITERATURE REVIEW

2.1 Introduction

In 1953, Hendrik Verwoerd, the Minister of Native Affairs in South Africa, stated in Parliament, Cape Town, South Africa that, "racial relations cannot improve if the wrong type of education is given to Natives" (Fiske & Ladd, 2004:1-2).

It was believed that by receiving a better education, the marginalised people, who included all non-white (Giliomee, 2012:67) or non-European South Africans, would become frustrated with their lot as they were being armed with an education which could not be utilised in a country where their expectations for a "better life" would be left unsatisfied. This argument made by Verwoerd, led to the approval by Parliament of the Bantu Education Act of 1953 and the advent of a totalitarian education system (Fiske & Ladd, 2004:1-2).

Since the democratic elections in 1994, the education system of South Africa has undergone dramatic changes. Various curriculum policies[1] have been promulgated and implemented to create a framework for the transformation in education under a single unified system based on the principles of equity and redress the formerly fragmented and racially divided education system. The 1994 democratically elected government drafted the Constitution of South Africa (47th International Conference on Education, 2004:1; Strategic plan 2010/11-2012/13:10).

The Africanized philosophy of Ubuntu, which is discussed in a later chapter, refers to the connection between individuals which allow them to be part of a collective people. For this connection to exist, all parties (individuals) involved engage and interact with each other at a level where each party respects the rights and liberties of the other party, even if they have opposing thoughts which clash with the individual's or collective's ideologies (Letseka, 2011:48; Masango, 1982:932).

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[1] The Outcomes Based Education (OBE) was introduced in 1997. For improvement purposes, the OBE system was reviewed in 2000 and led to the creation of the Revised National Curriculum Statement (RNCS) for Grades R-9 (DoE, 2002:1) and the National Curriculum Statement (NCS) Grades 10-12 (DoE, 2002: 1-2)in 2002. In 2009 the RNCS and the NCS were reviewed as well and resulted in the combination of the National Curriculum Statement (NCS) for Grades R-12 in 2012(DoE, 2011b:3). **"Values in Education: Programme of Action"** document released in 2000(DoE, 2000:11-12).

As a result of South African's fractured past, citizens, particularly school going learners need to make the transition from being an oppressed people to that of a democratic populace. This interaction must be fostered at an early age, where learners are taught how to live side by side with each other and not be threatened by the "otherness of others" (Benhabib, 2002:25,130) or a "we and others" sentiment as posited by Young (2002:5) as mentioned in Chapter 1.

I shall now explain how education may be used as a vehicle to drive the theories underlying democratic citizenship for this study. An explanation of what education as a philosophy is discussed.

2.2 Philosophy of education

Philosophy, as a study, forms a theoretical basis to answer fundamental questions dealing with the nature of knowledge, beliefs, academic disciplines or activities being experienced. It acts as a guide for the lay person or professional student to understand the behaviours and basic principles of a discipline (Hirst & Peters, 1970:3). Furthermore, it questions the meaning given to the structure, order and organisation of the world we live in, thus providing a methodology on how to apply this knowledge in other instances (Hitchcock &Hughes, 1989:20).

In the book "The Republic", Plato (Manis, 2013:5-6) claims that in a perfect State, the rulers of a society should have education as its priority. In doing so, the circumstances in which citizens live would be improved.

Here, with reference to Plato, the "educated citizen" is taught the basic fundamentals of education, namely religion, politics, arts and physical health. He is taught that if he can fulfil the requirements of these lessons, he will be able to function as a contributing citizen who aims to improve his lifestyle and in doing so, improve the context of the environment he lives in (Manis, 2013:5-6).

The purpose of education is to act as a guide, give direction and purpose and control situations for a pre-determined outcome to be reached (Dewey, 2005:28). The different terms relating to education, learning, teaching democracy, citizenship and its values, will be analysed for greater clarity and meaning which may act as a guideline for educators or policy

makers whereby decisions such as curriculum planning, teaching methodologies or learner-needs could be formulated(Hirst& Peters, 1970:13).

The purpose of conceptual analysis is dual. Firstly, to analyse the singular meanings of the conditions required for democratic citizenship to be practiced. Secondly, it creates a connecting thread between the definitions of these conditions and the "outcome of the literature review and research method" (van Wyk, 2004:148) and their relevance in the creation of a community where democratic citizenship is practiced and taught. Hirst and Peters (1970), as leading thinkers in the area of conceptual analysis, argue that a "concept" is an abstract idea, notion, plan or intention. A "term" is a concrete idea which is used to refer to something. By itself, the term "concept" can be used in a variety of ways to refer to an existing idea or practice (Hirst& Peters, 1970:3). Here, the user has an underlying premise of what the concept should be as there is existing knowledge to verify or dismiss it. The source of what is being conceptualised is not unknown to the reader, but the application of this knowledge can be misconstrued if it is used in the wrong context.

It is not a practical approach to follow if no clear distinctions between terms or concepts are made. For a concept to be acceptable to its context, information must be readily accessible for the reader to discriminate against or decide if the available concept satisfies the dictates surrounding the context in which it is being used (Hirst& Peters, 1970:4). Firstly, the reader must therefore have a sufficient understanding of the meaning and application of the concept before using it. It must be stressed that although knowledge on context of the concept would be an advantageous condition, it is not a necessary one. Meaning and context can be derived from the given concept with very little contextual information needed by the reader. A conclusion can be reached through recalling previous instances whereby the given concept has been used (Hirst& Peters, 1970:4).

Secondly, having a "concept" does not necessarily mean that the reader is appropriately equipped to make the above mentioned discriminations. Hirst and Peters (1970:4) suggest that "having a concept" entails that the reader has adequate experience within a context to draw conclusions from what the concept, is as well as being equipped with the skills needed to discriminate and respond appropriately.

For one to discriminate between and make decisions on the basis of a "concept", a pattern or thought processing should be followed to draw conclusions, understand and appropriately respond to the context which must be satisfied to understand the context of the situation. To do so with a degree of success, the reader will have to analyse the concept. Thus, the clarification of the second term of "analysis" will now be unpacked.

An analysis is the detailed examination of phenomena. In relation to the term "concept", an examination of how the words are used in the given concept are analysed to see what "principles or principle govern their use" (Hirst& Peters, 1970:4). That is, does the wording of the concept satisfy the context in which it is being used or is a more appropriate word needed?

The differentiation between a "weak and strong sense" of an analysis is discussed through the authorship of Hirst and Peters (1970:4-5) who posit that a "weak sense" is when a more appropriate word can be used to clarify a characteristic in the context of the concept which is needed to make it applicable to the original context. That is, what words must be present for it to make logical sense and fit the context.

Furthermore, Hirst and Peters (1970:5) define a "strong sense" or definition as one in which irrefutable proof is evident in the words used to satisfy the context of the concept. Here, guidelines or a check-list is given prior to a conclusion being drawn to what the context of the concept is. In doing so, the words used must satisfy the criteria laid down. In reality, such strong senses are artificial and used only in situations where there is a set answer which can be achieved only by following a rigorous set of rules or guidelines.

Within the study of conceptual analysis, researchers make use of the weak sense. Only "logically necessary conditions" (Hirst& Peters, 1970:5) may be used in formulating an analysis of the concept and in doing so, the researcher has distinguished between the difference of "doing philosophy and doing science" (Hirst& Peters, 1970:5). The combination of philosophy and sciences is what will inform this study.

However, these authors note that finding the ideal words to fit the dictates of the concept may not always be possible unless there is no other logical word to be used (Hirst& Peters, 1970: 6).Various options are posited as results before a final decision is made based on the viability

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of the words in relation to the context that it should satisfy. It is with this understanding that the term "conceptual analysis" can be discussed.

The purpose of framing this study from a conceptual analyses perspective is to analyse other philosophical questions so that the researcher can have a clearer understanding about the study being conducted (Hirst & Peters, 1970:8). It allows the researcher to see how the concepts being analysed are connected to the bigger study conducted. In addition conceptual analysis emphasizes the extent to which the concept being analysed is dependent on moral assumptions which can be challenged by others (Hirst& Peters, 1970: 9).

Conceptual analysis examines a complex problem by determining what its root concepts are (Hirst& Peters, 1970:11). Once highlighted, these root or basic concepts are analysed in their entirety, whilst keeping their relation to other concepts within the problem. Their meanings are then identified and further analysed for their suitability with regards to the context of the concept as well as to identify the skills which are needed to solve the problem (Girgis, 2012:2; Petocz & Newbery, 2010:126).

It must be stressed that concepts cannot be studied in isolation or in a self-contained manner as human beings are both linguistic and non-linguistic in their approach to problem solving methods. The individual's context and innate belief system may dictate their reaction to various situations and their interaction with others.

In conceptual analysis the researcher applies logic and undertakes a theoretical research to understand the concept in the given context. The concepts used in the sentences, the context the concept is used in and the purpose of the text must be understood before a definitive conclusion can be reached (Hirst& Peters, 1970: 8; Petocz & Newbery, 2010:126). For understanding to occur within this process, the researcher's first step could be to reduce the problem's core structure (Girgis, 2012:2).In doing so, it reduces the amount of concepts to be analysed, thus decreasing the complexity of the problem into a more basic study. An advantage of this freedom is that the researcher may decide how simple or how complex their analysis of the problem should be. This decision rests on the target group the study is aimed at, or the level of understanding of the target (Girgis, 2012:2).

It is with this understanding that the concept of policy will be unpacked.

2.3 Policy

A policy for the purpose of this study is referred to as both policy as a) discourse and policy b) as text.

Policy as discourse refers to the various dictates which are discussed before a policy is drafted to satisfy the specified purpose for which it is being implemented. Policy as text refers to the revised and already published policy document. For the purpose of this study a document can be defined as being mainly written texts which relate to aspects of the social world. Written texts are defined in terms of their accessibility. Policies range from public documents- documents which are readily accessible to the general population and private or personal documents- these include letters, diaries and photographs which are not accessible to the general population (Hitchcock & Hughes, 1989:212).

   a) As stated in Hitchcock and Hughes (1989:212), once a written text is created for whatever it is needed for, it becomes a potential source of data to be reviewed for deeper understanding and interpretation. Thus the discussion before the policy is drafted as well as the end product are "implicit" in each other as policy discourse produces frameworks of sense and obviousness with which policy is thought, talked and written about (Ball, 1993:44).

   b) Policy texts are set within these frameworks which constrain but never determine all of the possibilities for action. An advantage of policy and document analysis is that it aims to define the problem accurately and systematically find feasible and effective solutions to solve the problem (Patton & Sawicki, 1993:60).

2.3.1 The curriculum assessment policy statement

2.3.1.1 Introduction

The school environment is where future citizens meet, interact and where they initially learn how to coexist with each other in an amicable manner. The classroom is the forum in which these young citizens learn how to debate with each other in order to make their voices heard as well as where they learn how to listen to their peers' point of view and learn to respect these opposing views. Thus, the school and classroom is where social skills, acceptable to the community, are transferred.

The Global Thematic Consultation on Education in the Post-2015 Development Agenda, co-led by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the United Nations Children's Fund (UNICEF) with support from the Governments of Senegal, Canada and Germany, and the William and Flora Hewlett Foundation, defines a good-quality education as being that tool which will furnish all people with the needed skills and knowledge to be contributing members of their society (Sayed,2013:22). Just as importantly, these educated individuals should be encouraged to develop skills with a positive attitude towards their context and that of other societies; the importance of protecting the natural environment they live in and possible sustainable practices geared towards its protection; the importance of developing higher-order thinking skills; and the development of technological skills to ensure that they were keeping up with market trends, to mention a few, would be promoted (Sayed, 2013: 22).

Sayed (2013:22) further states that the obvious theatre for the promotion of these traits would be in the schooling environment, although it was noted that changes to the curricula would not ensure that these skills, knowledge and attitudes would have the envisioned impact on the economic and social environment if basic literacy and numeracy skills were not uplifted in those communities where schools were marginalised due to monetary or racial issues (Sayed, 2013: 22).

As an educator, I agree with Sayed's supposition in that those classrooms foster learners from all economic societies, and the classroom is ought to be where virtues may be modelled to learners. The school itself is dependent on the fees paid by these learners to ensure that more educators may be employed to reduce the number of learners in a classroom, thus aiding the educator by reducing classroom sizes. The change in curriculum would not affect the social and economic variables within the classroom. The attitudes and values fostered in the learner's home-environment is what impacts on their learning on a daily basis. What is taught in the classroom may not align with the teachings at home or in the environment the learner lives in. Thus, curriculum changes may have a minimal impact on the fostering of these envisioned skills as mentioned above.

It is with this premise that the re-designing of any educational programme being practised in schools must be developed with its focus and scope concentrating on the development of a society (Sayed, 2013:22) in which the basic rights and liberties as declared in the Bill of

Rights, is actively taught and practised by both educators and learners. In reality these rights and liberties may not be actively practiced as envisioned by the Government.

An example of this is the poor results across all grades still being produced by schools based in rural communities compared to those situated in more affluent communities (Mouton, Louw & Strydom, 2012:1213) where the allocation of resources such as educator-specialists, school infrastructure and material resources such as textbooks are freely available and affordable, should it be needed. For democratic lessons to be effective in the classroom- at affluent levels, learners must be taught how to value their fellow peers. These lessons may teach them how to communicate with learners who do not share the same or cultural background. In doing so, they may learn how to communicate with their peers in such a manner as not to disrespect the "diverse nature" of a society (UNESCO, 2000:18-19).

The focus of this study is the analysis of the NS CAPS document. The study explores whether lessons taught in the Natural Sciences classroom (Grade 7) possibly promotes and engenders democratic citizenship (DoE, 2011a: 5-9). These lessons are based on the prerequisites of the Curriculum Assessment Policy Statement document in Natural Sciences Grades 7 to 9 DoE, 2011a).

The study of the Natural Sciences policy document is an ideal vehicle to research whether descriptive, actual and authentic discourse is possible within a classroom. The Department of Education (DoE, 2011a:9) document states unambiguously that the Natural Sciences at Grade 7 level should prepare learners for active participation in a democratic society that values human rights and promotes responsibility towards the environment. This is an ideal setting for authentic discourse as learners are unique in their reasoning and thinking skills. This may lead to the sharing of different thought processes and problem solving methods.

Furthermore, learners should be prepared for future economic activities and self-expression (DoE, 2011a:9). To prove or disprove the notion that the Curriculum Assessment Policy Statement document in Natural Sciences Grades 7 to 9 could possibly engender democratic citizenship, a brief overview of its predecessor, the Outcomes Based Education Policy (OBE) document in Natural Sciences, is brought to the fore in this study and analysis. The purpose of this analysis is to give clarity behind the rationale for the change made from OBE

curriculum to the CAPS education system. I shall now discuss the concept of "policy" specifically to show how the implementation thereof may lead to educational reform.

What policy is, cannot be strictly defined as it is dependent on the context to which it refers and for what purpose and outcome it has been drafted; it influences the way researchers will think at various points in history as well as how they will analyse and conduct a study (Ball, 2006:44; Cahn, 2012:199). Furthermore, Ball (2006:44) posits that policy is both a process and an outcome. The process refers to the steps taken to reach a consensus for what the purpose and aim of the envisioned policy is whereas the outcome refers to the actual policy document which was created because of this need. Ball (2006:44) continues stating that a policy is thus dualistic in nature and purpose as this process and outcome refer to policy as texts as well as policy as discourse, where one aspect is dependent on the other. I shall explain.

Policy as discourse refers to the conversation that occurs during the process of formulating the policy. This is the forum where the policy is discussed, analysed and then written. Thus, discussion or discourse forms the cornerstone of policy formation, as thoughts are verbalised then documented to paper. The context of what is said as well as who said it and with what authority it was said will influence the success of the proposed, verbal policy being successfully transferred to a textual document (Ball, 2006:44,48).

Rabinow (cited in Ball, 2006:48) states that "We do not speak a discourse, it speaks to us. Thus, if the CAPS document is the discourse, it speaks to us, the practitioners in classrooms. We are the subjects, the voices, the knowledge, and the power relations that a discourse constructs and allows.

Cahn (2012: 199) further posits, "In a real world context, public policy can be understood as the public solutions which are implemented in an effort to solve public problems". Here, policy is understood within a localised sphere where the needs of the people are satisfied. Waghid (2003:4) concurs in allowing that policy relates to the formulation of a set of justifiable prescribed actions. These are to be implemented according to the framework in the education system to bring about change. We do not "know" what we say, we "are" what we say and do. It is with this power, that the policy as a text is created. It provides the guidelines stated in its purpose, but does not determine all the possible methods and the outcomes which

are the result of this implementation. Because people are individual in their thought processes and may be reading and analysing the text for specific information or reasons, it is left to the reader or the analyst to decide the context in which the policy will be utilised in.

Policies may also be perceived as being "major or minor" depending on its context. A government-sanctioned policy- known, as a big p-policy is something which has been formalised and is backed through legislation (Evans, Rich, Allwood & Davies cited in Ball, 2008: 6-7). However, before these policies are formally accepted within the context or by the institution it is being used in, they are discussed and rewritten according to the needs of the institution or the context it is to satisfy. This process leads to the creation of minor or little p-policies. These p-policies are those announced through legislation. These policies change over time, as they are rewritten or reworked through speeches, reports or agendas to fit the needed context. They (the policies) can be seen as processes which lead to future action. The "when" and the "how" are not specified, as it is dependent on the context it will be used in (Sayed & Kanjee, 2013:5).

Thus, policy formulation is not static; it is fluid in its adaptability to suit a situation as well as in its understanding. The onus is therefore on the researcher to draw conclusions from the data given in the policy documents and then match it to the existing situation. This process is referred to as policy research (Plank & Harris, 2006:38). The aim of policy research is to answer "policy-relevant" questions and to enhance or challenge the basic premises on which these policies have been built (Plank & Harris, 2006:38). It is an ongoing process, which will change, depending on who is reworking it to meet specified, predetermined outcomes.

As stated in the introduction, this study aims to   analyse policy documents by making use of critical discourse analysis (CDA). Through this analysis (method), the conflicts and power struggles occurring within the policy document will be discussed. These conflicts exist as the function of the policy may be contested (Sayed & Kanjee, 2013:6).

These conflicts are twofold. Firstly, the function is dependent on the purpose for which the document is being used for as well as the context it is being used in. Secondly, the reader's understanding of what is read may be viewed as a conflict as well as readers may have various levels of cognitive ability or experiences which may influence their understanding (Sayed & Kanjee, 2013:6) as stated in the NS CAPS document (DoE, 2011a:10). Thus the

formulation process may be contested, as various factions may have their own set of predetermined specific outcomes, which they wish to promote in their institution or to satisfy a context. Also, a policy may not be suitable to meet the needs of the institution or context or possibly may not be fully understood by the parties involved. These factors too lead to miscommunication and conflict between opposing parties. It must be noted that a policy only acts as a guide. It is not a pre-concluded decision where its dictates must be adhered to. It is open to interpretation and aids the reader to apply it as they have interpreted it.

Education policy specifically, is aimed towards educational reform where it is geared towards progress being made so that former antiquated or undemocratic situations- such as the education system under the apartheid regime post-1994 in South Africa- are changed for the advancement of the collective (Ball, 2008: 6-7). These recurring educational systems are failing to produce a skilled workforce. This disadvantages youth as they are unable to secure meaningful employment on leaving school. In turn, this puts financial strain on the economy as it is burdened with a poorly educated work-force who cannot meaningfully contribute towards the advancement of society in areas such as sciences and technology.

It is with this preface that the Curriculum Assessment Policy Statement (CAPS)in Natural Sciences Grades 7 to 9 and briefly the Outcomes Based Education Policy document in Natural Sciences with various other policy documents will be analysed to understand how the South African government through the Department of Education, has influenced a positive reform within the schooling environment to ensure that the fragmented education system which existed during Apartheid was abolished and to pave the way towards a democratic future.

Researchers have concluded that a factor influencing this lack of employability could be that the curriculum systems in place is outdated and does not cater towards empowering youth with the skills needed to be a contributing member of society in the twenty-first century (Sayed, 2013:25).

The documents that will be referred to are the:
   i.   Revised National Curriculum Statement (RNCS) for Grades R-9 (DoE, 2002:1),
  ii.   National Curriculum Statement (NCS) for Grades R-12 (DoE, 2011b:3),
 iii.   Values in Education: Programme of Action document (DoE, 2000:11-12) and

iv. The Curriculum and Assessment Policy Statement for Natural Sciences Grades 4 to 9 (DoE, 2011a:3).

A brief synopsis of policy implementation past 1994 will be discussed. The purpose of this synopsis is to underpin its importance as a benchmark from which the democratically elected government set out to change the way education was viewed and experienced by previously advantaged and disadvantaged learning institutions and communities.

2.3.1.2 An overview of policy implementation in South Africa, post 1994
From the inception of the democratic government, 22 different curriculum and policies relating to curriculum change only, were produced with the intention of creating a single curriculum which was based on the democratic principles which the new government established.

The first White Paper on Education (DoE, 1995:2) was the foundation on which this envisioned curriculum was founded. This white paper called for the abolishment of any educational practices instated by the apartheid government. What it proposed was an educational reform in which links could be made between education, learning and training for learners where they would be more prepared to function as contributing citizens on leaving school (Sayed & Kanjee, 2013:15-16). A brief timeline of these changes made from 1994-2009 will be given below to form a framework for the rationale behind the implementation of the Curriculum Assessment Policy Statement which is currently used in schools in South Africa.

During the period of 1994 to 2008, 27 Bills of Education; 36 Education Acts; 7 White Papers; 3 Green Papers; 26 Bills; 52 Government Notices and 26 calls for comments (Sayed & Kanjee, 2013:6-7) were created collectively, to reform both the basic education as well as the higher education sectors (Sayed & Kanjee, 2013:6-7). These reforms can be traced from its conception in 1994 to its status in 2014 by tracking the contributions made by the various education ministers to the creation of three completed education periods and the current period which is ongoing.

During this period, major curriculum changes occurred where the impetus towards creating an educational system in which democratic principles by which a diverse nation such as

South Africa, could prosper. Six white and green papers in total were produced during this period. The focus of reform was placed on redressing the inequalities inherited from the apartheid government. It is also during this timeframe that the Outcomes Based Education policy for Grades R-12 was implemented to overcome the negativity fostered during the apartheid era (DoE, 2011a:3). The Outcomes Based Education Policy document will be discussed later on in this study.

During the period 1999 to 2004 Kader Asmal served as minister of education. This is the third period of policy-making, where implementations of policies were concentrated on (Jansen, 2003:2; Van Wyk, 2012:18). During this period, 16 acts were passed. Of these acts, two carry the most significance, namely the Education White Paper 5 and Education White Paper 6 which were both published in 2001. They are significant in their purpose as they focus on the inclusion of all learners with special needs into main stream education institutions as well as the training of the educators to be equipped with the skills required to educate these learners. This was a major shift from excluding these learners from mainstream schooling as well as work places. This exclusion went against what the new Constitution of South Africa by way of the Bill of Rights (South Africa, 1996) stood for. The period beginning in 1994 and continuing to 2004 are viewed as being the timeframe in which the transformation and refinement of educational policies were the objectives of the government and national education department (Sayed & Kanjee, 2013:9).

The period from 2004 until 2009 was led by education Minister Naledi Pandor. Only one white paper was passed during Minister Pandor's regime. White Paper 7 dealt with e-education. Furthermore, three acts were passed of which two were amendments to existing laws. Policy activity during this time focussed on notices, of which 21 were passed and calls for comments. This era, reviews how the implementation of the previous policies unfolded (Sayed & Kanjee, 2013:8-10) in which the Outcomes Based Education and the 2009 until present (2014) is being chaired by Education Minister Motshekga. I shall now briefly outline Outcomes Based Education.

2.3.1.3 Outcomes Based Education (OBE)

The South African Qualification Authority (SAQA) Act 58 of 1995 (South Africa, 1995) was the first law passed for educational purposes by the post-apartheid government. Its purpose was to create a regulatory body which ensured that there was a standard of quality assurance

to ensure that learners were being educated according to the dictates of the new democratic constitution. SAQA (1995)keeps records pertaining to these quality assurance statements as well as records of learner achievements and registers of qualification on the National Quality framework whilst keeping these accurate records, SAQA(1995) ensures that each learner is provided with an education which taught learners skills and knowledge. More importantly, SAQA (1995) ensured that these qualifications were recognised throughout the country. With these premises in mind, a new curriculum, the Outcomes Based Education curriculum was introduced as the national curriculum to be used in South Africa (Sayed & Kanjee 2013:16-17).

The Outcomes Based Education curriculum, which was open and non-prescriptive (Chisholm, 2003:3), provided a broad framework for the development of an alternative to apartheid education.

The OBE curriculum received a positive response at first as it generated a new and forward thinking principle towards teaching and learning. The focus of OBE was to create an education forum in which learners were taught knowledge, values and skills to become contributing members in their society.

A glaring negative (Chisholm, 2003:4) which underpinned the lack of success of this curriculum, was the reliance on educators to create their own learning material. This negative was highlighted by the following factors which ultimately led to the OBE system being dissolved. The factors are: a skewed curriculum structure and design; lack of alignment between curriculum and assessment policy; inadequate orientation, training and development of educators; learning support materials that are variable in quality, often unavailable and not sufficiently used in classrooms, to mention a few (Chisholm, 2003:3). These were some of the areas which had been flagged as needing attention or revising.

As a response to these problem areas, a review committee proposed a revised curriculum, the Revised National Curriculum Statement. Its purpose was to provide coherence and a clear framework as to what needed to be taught (Chisholm, 2003:4).

The major actors in shaping the Revised National Curriculum Statement included educator's unions and radical intellectuals, who all had their own agenda in wanting their view and

teaching to be expressed in the Revised National Curriculum Statement. The Revised National Curriculum Statement was an ideal site for intense power struggles as the politics of the curriculum revolved around the weight and role of particular players (Chisholm, 2003:12).

2.3.1.4 The National Curriculum Statement (NCS)

The current education system in South Africa is represented by the National Curriculum Statement Grades R-12 (NCS), which is a policy statement used to guide learning and teaching. The 2011 to 2014 period ushered in the implementation of a new educational system, where the Curriculum and Assessment Policy Statement forms the foundation of South Africa's new curriculum. It is comprised of three sections namely the Curriculum Assessment Policy Statement (CAPS), the National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R-12 and the National Protocol for Assessment Grades R-12 (DoE, 2011a:3).

The National Curriculum Statement Grades R-12 is the embodiment of the guidelines on how to furnish learners with the necessary knowledge, values and skills envisioned by the government at the inception of democracy in South Africa. It serves the government by ensuring that its future citizens are taught how to respect the rights and liberties of all their diverse compatriots but at the same instance, prepares them to be functioning and contributing members of the global society (DoE, 2011a:4).

This transition from the schooling arena to the workplace should thus occur with very little disruption as the NCS facilitates much training within the classroom to occur according to what needs are highlighted by workplace institutions. This premise leads to the assumption that the NCS has been formulated with the aim of providing a capable and productive workforce for the economical growth of the country. These needs in the workplace have been identified with the help of businesses as the NCS states that "the National Curriculum Statement Grades R-12 serves the purposes of: providing employers with a sufficient profile of a learner's competences" (DoE, 2011a:4).

However, the primary aim and purpose of the NCS and its supporting documents, is to ensure that the rights and liberties of each and every citizen in the schooling system is respected, valued and utilised in the development of a unified nation which is a strong contender within

the global economy. Throughout the document, reference is made to the inclusion of all learners in the classroom, regardless of their race, creed and capabilities. Inclusive education is highlighted to further reiterate that each citizen, regardless of their physical or mental capabilities are to be valued as citizens who share the rights and privileges that their status as a South African citizen awards them (DoE, 2011a:4-9).

Furthermore, the implementation of the document aims to empower learners with critical thinking skills required to interact with others as well as make well-informed decisions in a social sphere.

In the past, learners and educators had a strict relationship in which what was said and how it was said was strictly observed. This form of censorship according to Foucault (1978:17-18) was the norm in colonial times. Tact and discretion limited the interaction between people, depending on their relationship. Thus, freedom of speech and deliberation was not allowed. However, with the advent of democracy, this strict form of censorship is no longer apparent between learners and educators. Freedom of expression (RSA, 1996:1249) allows citizens to share thoughts and ideas freely without the risk of persecution, provided it complies with the Bill Of Rights (RSA, 1996). These sentiments are especially critical for this study as learners may encounter problems which require critical thinking and the execution of the decisions made based on these problem solving skills. What this aims at achieving is to illustrate to learners that they will encounter individuals who will not be in agreement with them and how to interact with these individuals at a social level, without infringing on anyone's basic rights and liberties (DoE, 2011a:5). It is with these guidelines in mind that the CAPS document will now be analysed.

2.3.1.5 The Presentation of the Curriculum and Assessment Policy Statement (CAPS) in Natural Sciences Grade 7

The National Curriculum Statement Grades R-12 (NCS) stipulates policy on curriculum and assessment in the schooling sector. It is a comprehensive Curriculum and Assessment Policy document developed for each subject. It replaces the Curriculum Subject Statements, Learning Programme Guidelines and Subject Assessment Guidelines in Grades R-12. The CAPS document was implemented into the South African schooling system in the Foundation Phase in 2012 the Intermediate Phase in 2013 (DoE, 2013:58). The purpose of this document is to produce learners who are able to identify and solve problems in various ways, work as

an individual or as part of a team when solving these problems and to use a range of communication methods to share their findings (DoE, 2011a:5).

The CAPS Natural Sciences document aims at achieving the development of a range of process skills which may be utilised by learners in everyday life. Because these process skills are taught in a group situation in class where learners from various backgrounds are in close proximity with each other, socialisation occurs. Through these shared experiences, learners are exposed to different ways of thinking and may learn how to solve problems in new ways. Thus, these process skills may develop their cognitive ability. These process skills act in conjunction with specific aims which form a framework as to what should be taught each term and each grade. Progression from grade to grade is apparent in these aims. It has provided teachers with clearer guidance on what to teach and the pace at which the curriculum needs to be covered (DoE, 2013:19). The following cognitive and practical process skills are incorporated into the NS lesson: accessing and recalling information (DoE, 2011a:10); using the scientific process a way of investigating things about the world (DoE, 2011a:11) and the development of language skills which include reading and writing (DoE, 2011a:12).

Thus, the implementation of the Curriculum and Assessment Policy Statements (CAPS) in South African schools, have created an environment in which it envisions that all learners will be "...inspired by the values of a society based on respect for democracy, equality, human dignity, life and social justice" (DoE, 2013:8).

This curriculum seeks to develop potential in learners to develop skills and values which will equip them to become contributing members of society (DoE, 2011a:9-10). In Sciences, making hypotheses based on given information forms part of each lesson. Learners are encouraged to use a variety of processes to prove or disprove their ideas. In doing so, they learn how to reason and make objective decisions based on their thinking process (DoE, 2011a:10). These skills and values include character traits and skills such as confidence in self, compassion for others and the environment, to be an active and participatory member in their society who opposes all instances of undemocratic behaviour, to be independent and critical thinkers who are fully capable of making sound decisions based on evidence given, to be literate and numerate and thus be capable of contributing towards the economic future of South Africa through utilising these skills in the economic arena(DoE, 2013:8).

The study of Natural Sciences policy document is an ideal vehicle to research whether descriptive, actual and authentic discourse is possible. NS at Grade 7 level should prepare learners for active participation in a democratic society that values human rights and promotes responsibility towards the environment. It should also prepare learners for future economic activities and self-expression (DoE, 2011a:9).

The study of natural sciences according to Dewey (2005:256) acts as the 'perfect stumbling block to the non-expert' or the lay-person who has not previously engaged with scientific practices. Being exposed to sciences can cause confusion or a state of discomfort as its true meaning is hidden. However, through the guidance of experts at school level- the educator, this knowledge is an ideal which can be attained through practice. Dewey (2005:256-257) further postulates, "science signifies a realisation of the logical implications of knowledge". Science learnt at school level should produce learners who understand that science can be relevant to everyday life (DoE, 2011a:10).

However, for this relevance to form part of the learner's context, they firstly must understand what the concept is and then apply this knowledge to their everyday life. This allows for clarity and teaches learners life-long lessons as they in turn may inform others (others referring to individuals not in the classroom) about said relevance for the improvement of everyday life. In a social context such as a classroom, interaction between peers could be encouraged through conversation and the articulation of new thoughts and ideas. Here, a forum for discourse is naturally occurring, as knowledge which was previously unknown is shared among individuals. That which was known can be revised and applied to new contexts and situations outside of the classroom.

Researchers such as Bundsgaard, VibkeLindØ and Bang (2012: 49-51), Donald, Lazerus and Lolwana (2006:57-60) and Freire (2005:55) concur with Dewey in saying that only through communication can human life hold meaning. Natural Science as a school subject is an ideal vehicle for this uncapped curiosity to be expressed and for active discourse to occur as this subject covers a range of knowledge strands which include life and living; matter and materials; energy and change; and planet Earth and beyond (DoE, 2011a:9) which may create sites for active participation. In a classroom context, children are more likely to practise discourse skills such as producing meaning from what is being said, forming subjects, regulating what is said and how it is said within particular societies and institutions and how

not to abuse the power they are given through interacting with others (MacLure, 2003:175-176) by engaging with these knowledge strands.

A disadvantage of using policy and document analysis is the availability of materials. It can be difficult to decide on how much or how little of the information will be sufficient to "accurately define the problem in a way that eliminates any ambiguity" (Bogan & KnoppBiklen, 2007:65; Patton & Sawicki, 1993:56).

As a researcher it is challenging to remain unbiased as policy can be construed in various ways depending on the context it is being analysed for. On interpreting the meaning of the data analysed, it is important to note that when a document is interrogated, the researcher analyses the content of the document to produce "objective, systematic and quantifiable data" (Hitchcock & Hughes, 1989:224- 225) which is used to formulate themes and recommendations from. The content analysis of data is thus finding recurring themes in the documents. This "frequency" will either corroborate the researcher's recommendations or disprove them.

This supposition made by qualitative researchers, suggests that a qualitative research methodology is better suited to analysing written materials in this particular research problem (Hitchcock & Hughes, 1989:44- 226). This data will then be broken up into manageable units and will then be coded and synthesised for the purpose of finding patterns. These patterns will then be relocated in the various lay discourses where they will be interpreted to give clarity to the problem formulated within the research question (Bogan & KnoppBiklen, 2007:159) as well as prove why using the qualitative research methodology enabled the researcher to draw these suppositions together to prove its significance to the study and the meaning of it to the reader (Hitchcock & Hughes, 1989: 226). The data will then be analysed by making use of critical discourse analyses (CDA).

However, this data will hold no relevance if it is not reviewed with its key audience in mind, the students as well as the purpose of this study, Natural Sciences in the CAPS document a vehicle of engendering democratic citizenship within the NS classroom.

It is with this understanding that the concept of citizenship will be unpacked.

2.4 Citizenship

2.4.1 Introduction

The term "citizenship" is often attributed to holding membership to a state. As a starting point around what citizenship entails, how citizenship is acquired will first be discussed.

Historically, the Ancient Greeks defined a "citizen" as one who had the privileges and burdens of self-governance. For the polis, or individual citizen, this entailed that he could be called on to give military service, do duty, pay taxes and/ or serve as a contributing member of office in the Ecclesia. The emphasis was placed on the individual and not the collective society in which they lived. For the polis to enjoy the entitlement of being part of the society they lived in, they were responsible for its upkeep. It was the duty of the politos to contribute towards the betterment of the city which they lived in. Thus, the etymological link between the civitas – the civis or citizens of a state- and the city which they served can be made. One entity was dependent on the other for a well-functioning society to prosper (Benhabib, 2002:162).

In modernity, this simplistic definition is no longer adequate in that there are more defining factors which contribute towards what makes an individual a citizen other than that they are legally bound to a state to aide in its functioning (Isin, 2009:369).

"Citizenship" as a concept can be observed within three modes, namely: *Jus sanguinis*which is granted when a child is born to citizens of a state. The child will automatically inherit their citizenship and be classed as a citizen in their own right as their parents are legal citizens; *Jussoli* occurs when a child is born in a state, regardless of the child's parentage and their status as citizens of the country and lastly, as *Jusdomicile*, where an individual assumes or acquires the citizenship of a country not of their birth by means of legal application made by the individual (Isin, 2009:369).

Thus, a definitive definition of what it means to be a citizen cannot be made. As a concept, its meaning is derived from the context it is being used in. Kymlicka (2007:470) and Kymlicka and Norman (1994:369), posit that claiming citizenship is not just a status, but a "defined set of rights and responsibilities" within a political community. It is not a singular or an apparent action, but rather a process where individuals share and deliberate over experiences. These

experiences may encompass numerous activities such as sharing a common linguistic, cultural, ethnic or religious background to create the collective identity of the group (Benhabib, 2002:162).

During the Apartheid regime of South Africa, the citizens of the country were separated into distinct social, economic and racial groups. Of these divide groups, the so-called black community was given an inferior education, as discussed by Giliomee (2012:67) whereby the amount of money allocated towards educating the so-called black population was limited and uncontested by the ruling party of the time (National Party and the United Party). This lack of monetary support allowed for an inferior level of knowledge to be passed on to learners. They were educated to become the physical workforce of the country. This resulted in a workforce who was physically capable but intellectually stifled as a result of not being exposed to a wider range of educational practices and as a result of educators having limited qualifications and levels of experience, as well as the physical environment in which these lessons took place (Giliomee, 2012:75) all contributed towards the lack of involvement of citizens on leaving school during the Apartheid era. In addition, the black peoples were citizens of the Bantu states and were not afforded South African citizenship.

Because their education was geared towards physical labour, these learners may not have been exposed to the social nuances as required to become an integral, contributing member of society. Whereas those students who were exposed to a more intellectual based education, were more equipped to interact with society and become contributing members in shaping their reality. Marshall (1950) suggests that what separates these working-class, hard-labourers from the individual, whose work involved engaging with mental and artistic ability, was the objective of his labour. The working class was driven by the need to earn a wage for survival. Brute strength was what was required to ensure this wage. The skilled worker-whose labour involved less physical strength but more mental dexterity, was driven by a need to seek knowledge to better himself and in doing so, become a more competent individual, capable of solving problems through applying knowledge or having finesse in executing their physical labours which was not solely dependent on physical strength (Marshall, 1950:4-5).

Furthermore, Marshall (1950) posits that only when the individual rose above the physical hardship in labour to that of one who valued knowledge above material goods, was he capable of "...developing respect for themselves and others; accepting the private and public

duties of a citizen; and that they were men and not producing machines" (Marshall, 1950:5). I however, disagree with Marshall's sentiments as during the time of Apartheid many labour unions that represented the workforce were driving forces behind opposing the Apartheid regime.

Opposition mainly took the form of mass boycotts and strikes. These actions were effective as South Africa was unique in its Apartheid system in that it was the minority who was in control of the majority. More so, the minority-represented by the so-called whites, were in dire need of the labour and vast workforce resented by the so-called black majority (Zunes, 1999:138).

Marshall (1950) continues with his description of what citizenship comprises of. He describes a citizen as he who has moved beyond working as a labourer to one who is concerned with "steadily becoming a gentleman" (Marshall, 1950:5). Marshall (1950) describes the concept of "gentleman" as the individual who respects himself and others, interacts with his community and strives towards the betterment of his society. He is active politically and is able to interact with others on a social level (Marshall, 1950:5-6). He continues to group these actions which should be practiced by citizens into three distinct groups as mentioned earlier in this study, namely the civil element, the political element and the social element (Marshall, 1950:10).

The "civil element" (Marshall, 1950:10) refers to the rights and liberties of the individual. As stated in the Bill of Rights (1996), these rights and liberties include freedom of speech and religion; the right to attend school; the protection of their liberties and so on. As a democratic country, these rights and liberties are closely adhered to and protected by the Constitution. South Africa as a nation is a firm supporter of the protection of the Rights and Liberties of all citizens. As posited by He (2010:50), the Constitution of any country is primarily focussed on protecting the fundamental, basic rights of all citizens of a country and these rights and liberties are recognised by foreign countries as well.

These civil elements are practiced in the classroom through the educator modelling the ideal behaviours of allowing learners to give their views, how to interact with others whilst respecting the rights and liberties of all students and so on. However, in reality, this may be difficult as the number of learners in a classroom has increased dramatically over a short

period of time. This has caused social issues within the classroom as educators are not always able to provide individual attention to learners. Also, learners come from different contexts which may lead to social issues such as gang violence, prejudice or racism to mention a few glaring negatives. The protection of liberties and the right to attend school may be put under discussion when faced with these realities. Thus, the tenets of a democratic environment are put at risk as all learners and educators may be in an unsafe environment on a daily basis- the gang wars in Manenberg, a community in the Western Cape, may be used as a prime example or the need for tarred roads to access a school in the Eastern Cape in South Africa may be used as another glaring negative of civil or fundamental rights not being protected.

The "political element" (Marshall, 1950:10) refers to the citizen's right to belong to a political party and give support to said party. In a South African context, evidence of the "political element" is quite visible, both during elections and outside of elections. Citizens are exposed to various political parties on a daily basis within their communities as well as nationally. The media is granted a modicum of freedom in their daily newscasts and social media groups. However, of these stories involving politicians, including the President, are at times vetoed. An example of such instances is the Nkandla report. Thus, South African are free in their support to whichever political body they chose as representation but there are still apparent cases of political strife within the greater government.

The "social element" (Marshall, 1950:10) includes the citizen's right to economic welfare, the right to be safe and free to interact with other citizens. However, due to globalisation and high rates of crime, it has become difficult for communities to remain as close-knit as they were in the past. An example of this is where learners are being bussed to schools outside of their immediate communities. This may lead to a sense of not belonging as the child experiences a different culture within the schooling community where they spend the bulk of their day. Religious or cultural practices may be vastly different to what is practised at home and this may cause problems in terms of identity and "citizenship" within the schooling environment as well as the home environment. What is culturally acceptable in one sphere may not be acceptable in the opposing sphere. Thus the schooling environment is tasked with the responsibility of teaching students how to live in proximity with these opposing cultures whilst respecting each of them. Also how to interact within these cultures is a responsibility with which the school and educator is tasked with as well. The onus is on the educator and by

extension, the curriculum which is taught to prepare these learners to become active participants in both of these environments.

The proponents of what is meant by the concept of "citizenship" as discussed by the following authors are provided for a greater understanding on the importance of knowing what citizenship is for it to be practised in reality.

Benhabib (2002:162-163), McLaughlin (1992:236) and Nussbaum (2009:10) concur that the aspects discussed below are vital for an understanding of the concept of "citizenship". Even though the authors are not necessarily in agreement concerning the number of interpretations of what is meant by the concept "citizenship", there is an obvious theme to their description of what characteristics a citizen should have to be part of a collective community. Nussbaum (2009:10) further posits that for the individual to become an independent thinker where he/she can make decisions based on what is right or wrong, ethical and constitutional without having to defer to an authoritative role player. Here, the citizen must be able to take into consideration what would be the best course of action to take when making decisions, as the results of these decisions could impact the collective, social community.

The term which Nussbaum (2009:10) uses to describe this phenomena is the capacity for Socratic self-criticism. This means that the individual must be an independent thinker who is capable of mentally envisioning themselves in like situations where they place themselves in the living context of someone else. Wales and Clarke (2005: 10) continues this presumption by noting that an individual cannot learn what is meant by the rights and responsibilities of being a socially sensitive citizen by reading about it from a book. Humans are social beings and much of what is learnt comes from mimicking others as people do not live their lives in isolation. Attainment of knowledge on how to interact with fellow citizens whilst upholding the liberties and responsibilities which are partnered with them is achieved only through a socially interdependent effort where citizens make a concerted effort to think about how their activities will affect others. This envisioned situation is what Nussbaum (2009:10) refers to as having a "narrative imagination". This is Nussbaum's last prescriptive to what is needed to be a citizen. She posits that what this state of mind attempts to achieve is to allow citizens to have some sort of empathy towards their less fortunate fellow citizens. She further suggests that by employing this type of introspection, citizens will be more socially aware of how their

decisions in a political or local context may impact on someone other than themselves or those in their immediate social environment.

McLaughlin (1992:236) posits four prescriptive characteristics which conform to his interpretation of what citizenship as a concept means. He lists them as being identity, the virtues required by the citizen, the individual's political involvement and the social prerequisites needed by the individual to form part of the greater community. These features are classed as being of a minimal view or maximal view. The minimal view deals with the legal status of the citizen and the maximal view describes the character of the citizen. These two concepts will be discussed in detail later.

Benhabib (2002:162-163) lists three components that fulfil the prerequisites of citizenship namely, collective identity, privileges of political membership and social rights and claims. Furthermore, Nussbaum (2009:10) has three components in her interpretation of what citizenship at a global level entails. She describes her envisioned citizen as having the capacity for Socratic self-criticism; he/she should be part of a heterogeneous community and must possess a "narrative imagination". However, she does not identify a legal obligation between the citizen and the state in her interpretation, unlike Benhabib and McLaughlin who specify the roles of the individual as citizens in a community.

Although McLaughlin (1992:236) lists four deciding features of a citizen compared to Seyla Benhabib and Martha Nussbaum's three, one of McLaughlin's features are subsidiaries of Benhabib and Nussbaum's three features and forms a determining aspect in two of his presumptions. The feature being referred to is that of the virtues required by the citizen to be part of a community (McLaughlin, 1992:236-237). Thus, the "virtues" of the individual as a citizen, extends to the features interpreted by Seyla Benhabib and Martha Nussbaum in their papers. The features referred to are the social rights and benefits of a citizen as posited by Seyla Benhabib (2002:162-163) and Martha Nussbaum's (2009:10) "narrative imagination" of the individual.

The first prescriptive needed by the individual to be acknowledged as a citizen is an identity. As noted previously, the identity of the citizen can be viewed from a minimal or maximal view (McLaughlin, 1992:236). The minimal view refers to the legal identity of the citizen and the rights and responsibilities that this legal status afforded. The maximal view of citizenship

delves deeper into the social aspects of the duties, rights and responsibilities of the citizen the community (McLaughlin, 1992:236). Within this view, a more dynamic approach to enacting what it means to be a citizen is required. These actions refer to the democratic involvement of the citizen within the environment such as the need to be conscious of his/her actions and the effects of these actions on fellow citizens. The citizen is obligated by law to uphold the dictates set by the constitution concerning the liberties of others and to take responsibility for actions should he/she step out of the bounds as set by the constitution (Benhabib, 2002:162-163; McLaughlin, 1992:236). Furthermore, Benhabib (2002:162-163) and Nussbaum (2009:10) concur that the individual must identify themselves as being part of a collective and diverse community in which they must contribute towards to ensure that positive growth can occur for the advancement of their community.

The second feature discussed by Benhabib (2002:162-163) and McLaughlin (1992:237) is the responsibility of the citizen towards the state. The citizen is afforded various liberties by the state on acceptance that they, the citizens, will uphold the responsibilities which ensures that their fellow citizens are protected from any unlawful action carried out by them. The citizen is granted the right to political participation and the right to hold office by the state as well. These two liberties ensure for a mode of transparency to exist between the state and its constituents. The minimal view awards the citizen the right to vote for the political party of their choice in a free and democratic election, thus the franchise only. This allows the citizen political representation by their voted party. With this, citizens are privy to certain aspects of public decisions being made. The maximal view however suggests that although all citizens are granted the same liberties by the state, as it is an egalitarian status in theory, social disadvantages exist amongst all citizens. These social disadvantages may result in those disadvantaged citizens not having much influence on the decisions made in the political theatre (McLaughlin, 1992:237). In this instance a deeper democracy is required for citizens to fully participate in community structures.

This brings us to the third prerequisite for being a citizen, the social rights and benefits that the citizen is entitled to by belonging to a community. As a member of a community, the citizen forms part of the functioning collective through his contributions to the betterment of his social environment. These contributions award the citizen with entitlements, liberties and the responsibility to uphold the laws stated in the constitution (Marshall, 1950 as cited in Benhabib, 2002: 163).

However, as suggested by McLaughlin (1992:237) there are disparities in the extent of how these entitlements are allocated to citizens. Within a South African context, until 1994, South Africans lived under an apartheid regime where allocations of resources were based on the race of citizens. In the years following the 1994 democratic elections, the government, working in tandem with the Department of Education (DoE) have launched conferences, workshops and various policies to better prepare educators and learners for their future responsibilities as democratic citizens (Schoeman, 2006:130). Benhabib (1996:68) suggests that all modern democratic societies are tasked with securing the "legitimacy, economic wellbeing and a sense of collective identity" of its citizens to be recognized by other democratic societies as being democratic. Should one or a combination of these three factors not be attained, the idea of what is meant by "citizenship" is threatened.

Kymlicka (1995:2) expands on Benhabib (2002), McLaughlin (1992) and Nussbaum's (2009) criteria of what it means to be a citizen, by describing most countries as being culturally diverse and that it is that same diversity which often leads to clashes between the majorities and minorities situated in said country. Often, the discord and unrest occurring within a society are the results of disagreed on issues influencing the basic rights of citizens.

An instance of such discord is the curriculum. It is the cornerstone of the education of the youth in a country (Kymlicka, 1995:1) and is a powerful tool for change, be it positive or negative as education can be seen as the "intervention into someone's life" (Biesta & Lawy, 2006:2). In this view, individuals are powered by the motivation that they will be improving someone else's life by making them "more human" (Biesta & Lawy, 2006:2). This intervention is motivated by the need to teach individuals the acceptable behaviour as expected by the society that they live in and are expected to with on a daily basis.

As an insight to the history of citizenship in South Africa, a brief overview of citizenship policy and practice during the Apartheid era in South Africa will be given. The purpose of this overview is to provide the reader with information which will allow for a clearer comparison to be made between the Apartheid policy practices before the advent of a democratic nation in 1994.

2.4.2 Citizenship in South Africa during apartheid

During the apartheid regime in South Africa, it was the rich cultural diversity of the non-white South African citizens which made them unique, but was also the cause for their persecution. Clashes between the non-white "citizens" and the government were evident during Apartheid era in terms of education practices and service delivery within the educational environment.

An example of these clashes occurred in 1974 when the Department of Bantu Education instructed schools in Soweto and other townships to teach mathematics and social studies in the medium of Afrikaans in Standard Five (Grade 7) and further on in the senior phase. The teaching of these subjects would then only commence the following year- in 1975. However, the minutes of the cabinet meeting reveal that the ramifications of this decision in the township schools were not discussed before the notice was sent out to schools by the Department of Education. The horrific result of this oversight was the Soweto uprising of 1976 which resulted in the death of school-going learners (Giliomee, 2012:83).

This gross act of violence was one of many factors which gave rise to the call for emancipation of the South African nation and its people from the international community by virtually all political bodies (Mandela, 2002:ix). This violation of basic human rights, where groups of citizens were being treated differently due to the colour of their skin, was regarded as a "moral struggle" (Mandela, 2002: ix) whereby all humans were forced by way of their humanity to fight against the "racial discrimination and tyranny" (Mandela, 2002: ix).

It was with this background that the new South African Constitution was constructed (RSA, 1996: 1243). However, the implementation of this democratic constitution and the eradication of all apartheid rulings did not halt the South African's need to ensure the sanctity of democratic rights and liberties.

One philosophical notion of citizenship, in South Africa, is referred to as 'ubuntu' (Masango, 1982:932) which translates as humanness, personhood and morality or that which keeps you respecting another person or disrespecting another person (Letseka, 2011: 48; Masango, 1982:932) or simply put "I am because we are". Although the concept of ubuntu is not unique to South Africa, as it has been found across most African communities through the ages, for example in Kenyan languages it is known as umundu or umuntu; in the Democratic Republic

of Congo it is known as bomoto and in Angola it is referred to as gimuntuKamwangamalu (1999:26) cited in (Waghid, 2010:109). Ubuntu as a descriptive of the new South Africa has resonated with the process of the democratization of the post-apartheid era of what it meant to be a citizen.

South Africans are reminded that it was due to the struggle of their predecessors that they are now liberated and that the lessons taught by these pioneers of democracy, should not be forgotten. The relevance of the concept of ubuntu across African nations is prevalent as many of these African societies have been the victims of a history of colonisation; racial oppression and segregation and economic, political and social instabilities (Waghid, 2010:109).

From these values, it can be presumed that the citizen within a democracy possesses the following virtues: understanding of and commitment to democratic values, respect for the common good, knowledge and understanding of political concepts , issues, structures and systems, higher-level thinking skills and a patriotic feeling, social skills, and an attitude of participation in democratic processes; and that democratic citizenship education in public schools is important for the survival of a constitutional democracy (Schoeman, 2006:135).

Thus, the general contention seems to be that a 'democratic citizen' is an individual who has the right to participate in political and educational activities, be awarded protection under the law, has access to the education within a system which holds true to the dictates stated within the Bill of Rights- and be treated with human dignity (le Grange, 2004:61).

In contrast to Nussbaum's (2006) thoughts on schools being the ideal space for democratic citizenship to be taught, Waghid (2010) , Le Grange (2004), Biesta and Lawy (2006:64-65) argue that although citizenship education is important, too much emphasis is being placed on this study within the schooling environment. They posit that a shift must be made from research, policy and practice and rather be geared towards the learner's gaining knowledge of democratic citizenship as well as how these learners can become actively involved with the promotion of democracy. However McLaughlin and Juceviciene (1997:24-25) agree with Nussbaum (2006) as they posit that education has a dual role to play in a society.

Firstly, education teaches values. No form of education can be value-free or value-neutral, the onus is thus on the institution to decide which values they wish to teach their learners. Secondly, the values being taught at schools are not confined to one culture, language or creed so as to include the diverse social and cultural students in the classroom. The purpose of Natural Sciences is to make sense of nature through investigations and observations. This knowledge is then applied to daily living (DoE, 2011:10). However, it is vital that the learners treat their environment with respect. Specific aim 1 in the NS CAPS document, states that learners should show respect for all living organisms they observe and interact with in nature- plants must not be cut unnecessarily and animals must be released as soon as they have been study (DoE, 2011:10). Specific aim 3 encourages learners to study the environment and to develop ways of living in harmony with the environment. Even though natural resources are vital to human's survival, the environment must be protected against degradation (DoE, 2011:10).

It must be noted that within a pluralistic liberal democratic society, one must be careful of not suggesting that any social group is devoid of values and thus these values must be taught to their young (McLaughlin & Juceviciene, 1997:24-25). What lessons in values aim to teach learners is that they live in a diverse society and thus they must be equipped socially to interact with these citizens in a manner which is respectful and does not infringe on any persons liberties. In doing so they may be equipped with the needed tools with which to communicate and interact with individuals both within and outside of their communities. With these tools they should be capable of understanding the need and importance behind respecting the rights and liberties of others and the significance that their behaviour will have on others, be it negative or positive.

The concept of "democracy" will be discussed now. The rationale for this discussion is to clarify what makes an individual democratic as it is these actions which will affect their interaction with others as well as within their community.

2.5 Democracy
2.5.1 Introduction
The concept of "democracy is derived from the 5th century BC Greek word, *demokratia* (Gutmann, 2007:521). The term *demokratia* is comprised of two separate words to give it its

meaning, namely *demos* and *kratos*. *Demos* can be translated as "the people" (only the "native adult male residents of a polis" are classified as representing the people) and *kratos* as "*power*". Thus, democracy as a concept may be defined as "the power of the people" (Ober, 2007:2). Although the meaning of *demokratia* seems simple when translated, in reality the *concept* of democracy is much more complex.

In Greece, political regimes were focused on the ruling body which could range from one person, a few people or a limited number of persons to a large and inclusive body. In Greek, the above terms: one, few and many, are as follows: one- *monarchia*, few- *oligarchia* and many- *demokratia*. When comparing these Greek words in terms of number, an apparent distinction in meaning can be discerned. The term *monarchia* is derived from the root word *monos*, meaning solitary; *oligarchia* is derived from *hoi oligoi*, meaning the few and most distinctively, is *demokratia* which is derived from the root word demos, meaning the collective body.

In line with the above, democracy is concerned not with a select number of individuals but with the collective body of a community or societies who are empowered. Even though the term *hoi polloi* is used to denote "the many" in Greek, "the many" is recognized as being the *demokratia* and not *pollokratia* or *pollarchia* (Ober, 2007:2). *Kratos*, as a root word, refers to "power". When used in regime-type suffix, it denotes power and strength or the "capacity to do things" (Ober, 2007:4-5). Thus, the concept "democracy presumes that people who live together in a society need a process for arriving at binding decisions that take everybody's interests into account and by virtue of their humanity deserve to be treated with respect as well as the entitlement to basic human, civil and political rights (Benhabib, 1994:173; Dewey, 2005:56; Gutmann, 2007:521).

As an introduction to the concept of "democracy", brief descriptions of its origins as a term have been given in the conceptual analysis above. The following section will focus on the different types of democracy and how these possibly impact on the people being represented under its umbrella. How and why democracy education within a schooling system is vital, will be addressed as well as the effects of the absence of a democratic culture within a social environment will be discussed.

Democracy presumes that people who live together in a society need a process for arriving at binding decisions that take everybody's interests into account and by virtue of their humanity, deserve to be treated with respect from others as well as the entitlement to basic human, civil and political rights (Benhabib, 1994:173; Dewey, 2005:56; Gutmann, 2007:521). Wolin (1996:33) understands democracy to be the catalyst in driving ordinary citizens to become politically aware and thus partake in political forums. These forums will act as a platform where the common concerns shared by fellow citizens may be voiced and possible solutions to these problems may be realised.

Democracy is generally accepted as a rule of law in which the power awarded to a person or group is limited by the laws set in the constitution of the country (Schoeman, 2006:131). These laws serve as a guide to ensure that no individual or group have their rights abused. These individuals or groups are represented by political parties who were voted in by the citizens, under no duress in a democratic election. The ideals of democracy are realised firstly through the representative political party being voted in by the people (Schoeman, 2006:131). Secondly, the political party is comprised of citizens of the country who, in theory, have the interests of the greater civil society in mind when representing their constituents' in the political forum (Schoeman, 2006:131-132). It is therefore their responsibility to participate within the political forum to ensure that the rights of their constituents are upheld by the ruling government. It is vital that these politicians are well informed citizens who are fully cognisant of these responsibilities (Schoeman, 2006:131).

Democrats claim that people are best equipped to protect their own interests. They (the people) will ensure as far as possible, that there is a minimal abuse of political power by those in power of making decisions for the people. The focus of this study is centred within the tenets of deliberative democracy. However, for clarity, I will briefly discuss Schumpeterian democracy, Populist democracy, Liberal democracy, Participatory democracy, Social democracy and Deliberative democracy (Gutmann, 2007:521-522). The authors of these democracies each claim that their theories of what a democracy should represent is best suited to protect and enhance the democratic community. Through analysing these various democracies and their tenets, it will be more apparent as to why deliberative democracy is best suited for this particular study.

2.5.2 Schumpeterian Democracy

Schumpeterian democracy claims that the voting power which citizens have has no real value in the political environment as it may not be representative of the population in its entirety- apartheid South Africa and Stalinist Russia being cited as examples Gutmann (2005:522). Schumpeter (1943:269) cited in Gutmann (2005:522) regards democracy as being an "institutional arrangement for arriving at political decisions". Although Schumpeter admits that political competition amongst parties are central to the concepts of democracy, he is of the belief that it (the votes) will make an apparent impact on the decision making processes carried out by the ruling parties.

2.5.3 Populist Democracy

In rejection to the Schumpeterian theory, Populist democrats claim that there is some value to be had from democratic procedures. However, they posit that people (citizens) should be allowed to rule themselves as "as free and equal beings rather than being ruled by an external power or by a self-selected minority among themselves" (Gutmann, 2005:523).Populists posit that there is much value in following democratic procedures where the popular ruling party is selected by their fellow citizens compared to the unpopular rule which has not been awarded the support of their voting peers. For this popular rule to stay true to the ideals of the concept of democracy, stringent guidelines for processes and procedures must be implemented as well as "unmanipulated political preferences" (Gutmann, 2005:523) must be guarded against. However, these guidelines may be perceived as being in conflict with some populist's thoughts on what is meant by citizens being free and equal. These suppositions posit that what is perceived as "popular" by the ruling voter part, may not be a true reflection of what the populist movement aims at achieving. These ideals include the requirements to maintain a society. However, these requirements should be decided on by the society which it aims at maintaining and not by outside influences which may not take the needs of the society into account when making decisions. These thoughts go against the populist ideals of being free and equal as any constraints put on the popular rule can be deemed as going against the ideals of a populists party and thus, undemocratic- even if it is for justifiable reasons(Gutmann, 2005:523).

2.5.4 Liberal Democracy

The ideals posited by Liberal democrats are in a partial agreement with that of the Populist democratic theories. Liberals posit that for popular rule to have any value in the political

environment, each individual citizen must be furnished with a set of basic liberties which must act as method of checks-and-balances to ensure democratic procedures. These liberties are set in the constitution of a country. In a South African context, the basic liberties which each citizen is in ownership of are: freedoms of thought, speech, press, privacy, association and religion, the right to hold personal property, the freedom to vote and hold public office, freedom from arbitrary arrest and seizure and the access to basic education and healthcare(South Africa, 1996:7). Liberal democrats posit that by recognising that these basic liberties are vital to all citizens. Thus, Liberal democrats move to have Government prioritising the allocation of these liberties to all citizens- not only those who have voted for a particular political party. This may go far in ensuring that all citizen's rights and liberties are protected (Gutmann, 2007:523-524). Contrary to the Liberal democratic rule, Habermas (1996:23) asserts that the level of success of a government is measured by the number of votes it receives during an election. He contends that this is where the citizens of a country make the preferences to what they envision for the future of their country. Thus votes are cast with an understanding of the political party's ideals.

2.5.5 Participatory Democracy

In Participatory democracy, an argument is made that the Liberal democrats put too much emphasis on the protection of citizen's basic liberties and too little emphasis is awarded to the importance of political participation by citizens to ensure the sanctity of these basic liberties (Gutman, 2005:252). Considerations are made for this lack of interaction between citizens and the political environment by participatory democrats when they posit that there is a limited scope for participation offered to citizens today by their chosen political party. Participatory democrats call for more opportunities to be given to ordinary citizens to interact on their own behest, rather than by means of elected political official representatives (Gutman, 2005:252). Participatory democrats further suggest that if citizens were allowed more political liberties, there would be a greater turnout in voter turnout, less corruption in official positions of state and local government, public officials whose actions can be monitored by their constituents and therefore leave less chance for corruption occurring and more importantly, a larger representative body of local citizens participating in decisions which would ultimately have an impact on their (the citizens) lives (Gutmann, 2005:525-526).

2.5.6 Social Democracy

Social democrats claim that the basic liberties of all citizens must be protected (Gutmann, 2007:526-527). What makes the practices of social democrats unique to that of the Liberals, Participatory, populist and Schumpeterian democrats, is the inclusion of economic enterprises which are to be protected and granted the same basic liberties as that of the people (Gutmann, 2007: 527).

These two factors were traditionally not included under the umbrella of civil liberties and protection. However, social democrats call for protection within the family to protect against gender inequality and traditional roles foisted on women who may be susceptible to men who may exert their social, economic or sexual power (Gutmann, 2007:527-528). Reforms such as legislation against sexual harassment and the payments of subsidized childcare are called for. However, what must also be guarded against is the intrusion of the state into family matters where the division labour and use of family income are also not infringed upon as this too will influence the personal freedom and liberties of citizens (Gutmann, 2007:526-527).

2.5.7 Deliberative Democracy

This study in centred within the school of deliberative democracy as it satisfies the needs of the development of a democratic society and nation.

Deliberative democracy offers an answer which will satisfy the dictates set by the populists and liberals by supporting the autonomy of all people. Autonomy requires a distinctive kind of democracy that encourages citizens to deliberate over political decisions before accepting them. Deliberative democracy presumes that the democratically elected political parties are representatives of the people's interests. These political parties voice their constituents' concerns in a political arena. But, this presumption of representativeness can only be realised if the citizens themselves are involved in the formulation of decisions by means of deliberation (Benhabib, 2002:105-106).

Wolin (1996:33) expresses the concept of "politics" as being a common ground where a diverse society can have commonalities which act as an impetus for them to interact with each other in an amiable manner to ensure that their collective views and deliberations are promoted or protected. Here, "politics" refer to the interaction between individuals. Habermas in (Benhabib, 1996:21) continues with Wolin's (1996:3) supposition by positing

that "politics" may be a medium through which the members of a community may be made aware of their dependence on one another. Their sense of solitariness may have an adverse effect on the society which they live in due to their lack of interaction. For the security of their basic liberties, citizens are thus encouraged to participate in public deliberations for them to voice their thoughts, suggestions or complaints. It is during these deliberations that their political stances are strengthened or weakened. Here, the ideals of democracy may be realised through the active participation of citizens in the political forum. The purpose of their participation should therefore not be "participation-for-participation's-sake" (Schoeman, 2006:132) but because they want to share in its governance.

However, these citizens must follow the dictates set by the Bill of Rights (South Africa, 1996) to ensure that no other citizen's basic liberties are infringed upon. This respect of dignity of others and the protection of their liberties, may allow a society to prosper in its entirety, as a sense of closeness or togetherness is fostered amongst individuals to bring them together as a cohesive community. For the purpose of this analysis, the theory of deliberative democracy will be adopted as the democratic principle which is best suited towards developing a free and just society where the basic liberties of all citizens are protected (Gutmann, 2007:527-528). However, the implementation of deliberative democracy as the principle underpinning for democracy for this analysis does not imply that Schumpeterian democracy, Populist democracy, Liberal democracy, Participatory democracy and Social democracy are not relevant to the justification of what it means to be "democratic".

It was this need for participation and deliberation by citizens which played a key role in the reconstruction and development of the post-apartheid South Africa (Sinwell, 2011, 365-366). The citizen's need for a voice in the development of their nation was at the forefront of democratic change before the democratic elections of 1994. It was here where citizens realised that only through group participation would the abolishment of the apartheid regime be possible. The onus rested on the people to enact the concept of "politics" as posited by Gutmann (2007), (Habermas (1996), Wolin (1996) and Schoeman (2006). It was the civil society coupled with international pressure and political parties who played an active role in the realisation of the democratic South Africa. In a deliberative democracy, the civil society forms the backbone of all public deliberation.

Deliberation, as posited by Waghid (2010:31), creates a space for individuals to give their input about how a situation affects their well-being whilst having others listen and respond to what is being said. This input can be greeted with understanding when the information can be related to, or the speaker may be opposed by others who are not in agreement with their input due to opposing thoughts or experiences. Both these instances are vital for deliberation to occur.

Waghid (2010:31) explains this supposition in saying that when people speak, they may lack the needed articulation skills to make their audience understand what it is that they are trying to say.

However, understanding comes from listening, thus it is the listener who draws conclusions from what is being said. This understanding is drawn from the listener's own context and personal knowledge and experiences. The onus is thus on the listener to establish dialogue with the speaker to establish clarity in what is being said. It must be noted that the deliberative model is dual in its purpose.

Firstly, it accepts state intervention and the regulation of laws to protect all citizens from themselves through their words and actions and protection from being disadvantaged based on the guidelines set in the constitution (Waghid, 2010:31). Secondly, it views the interaction of citizens within their political environments as an essential premise for democracy to be practiced. It must be noted that the deliberative model does not assume to solve or satisfy all the issues deliberated on during forums. What it proposes to do is to solve disputes by calling on the state to intervene and thus ensure that all citizens involved are treated within the guidelines set by the constitution. However, not all disputes are given precedence in a public forum (Waghid, 2010:31). The deliberative model stresses the need for citizens to make use of their reasoning skills and formulate logical arguments and counter arguments for deliberation. Thus, the guidelines are set to ensure deliberation for purpose and not just for the sake of deliberation (Benhabib, 2002:115).

Furthermore, Benhabib (2002) asserts that an objection has been made against the deliberative model in that it is perceived to be naive in its proposed outcomes (Benhabib, 2002:121). Deliberation between parties-especially those on opposing sides of the forum will not always be resolved through logical deliberation. These deliberations could very likely

spark greater discord between factions causing more damage (Benhabib, 2002:121). In the Deliberative model's defence, discord wherever present, will make itself known whether deliberation takes place or not. The parties involved will find an outlet for their grievances. In such instances, the guidelines set by the constitution will come into play and perpetrators disregarding the physical, mental or emotional well-being of others or the desecration of public property will be dealt with according to the laws set (Benhabib, 2002:122).

2.5.8 Democratic citizenship

2.5.8.1 Introduction to democratic citizenship

From the concepts in Chapter 7, it may be presumed that democratic citizens are individuals who are active and contributing members in the society they live in. They have developed a moral or ethical code which is based on the rights and liberties stated in the Constitution of the country. By accepting these responsibilities, they respect the rights and liberties of others. However, it must be noted that the democratic citizen is not born with these virtues. These virtues must be nurtured at an early age and be physically taught through modelling a behaviour which is acceptable. An acceptable behaviour is that which is ethical, oral and fulfils the dictates as stated in the Constitution.

These virtues may not be apparent in the community that the learners live in. It then becomes the responsibility of the Government by way of the schooling environment to provide youth with these virtues. These virtues should be physically modelled by educator. This shift from teaching the theory of what a democratic citizen is to the praxis of what a democratic citizen does forms the rationale behind teaching democratic citizenship in schools.

Martha Nussbaum (2006:385) suggests that public education is crucial for the development of democracy. However, it must be considered that schooling and education does not only take place in the public sphere. Schooling occurs in various forms such as in a public school system or an independent school system. Home-schooling has become another option where children could be educated by their parents or via personal tutors. Education is therefore tasked with the responsibility of laying the foundations for democratic citizenship to prosper in a nation as well as to develop the autonomy of the individuals where they are able to think for themselves and carry out their actions in accordance to the constitution (McLaughlin & Juceviciene, 1997:23).

Enslin and White (2003:111) suggest that education, regardless of its environment, is crucial to the development of a country's democracy. For democratic citizens to fully understand the rights and responsibilities that democracy affords them, they need to be taught how to interact on a social level with their peers as learners are part of a diverse cultural community and are expected to interact respectfully with one another (Enslin & White, 2003:111).

In a social environment such as a classroom, interaction between peers is encouraged through conversation and the articulation of new thoughts and ideas in different subjects. Thus, democratic citizenship must be taught and nurtured through education. It is through these educative processes that the virtues of democratic citizenship, as stated in the Bill of Rights of South Africa are acquired (Enslin & White, 2003:111).

2.5.8.2 Democratic citizenship in schools

The rationale behind actively implementing democratic citizenship in schools is to eradicate any and all forms of social injustices carried out by individuals in a society (Waghid, 2010:77). These lessons in democratic citizenship are not taught in isolation, but as part of the normal curricula of the school.

As discussed in the introduction to this chapter, the 1994 Government of South Africa started implementing educational policies from the onset of its term in State. These documents will be discussed in greater detail further on in this paper. However, for clarity, one such document is the "Values in Education: Programme of Action" document released in 2001 (DoE, 2000:11-12). The document was aimed at paving a way for the "deepening of a democratic, united and non-racial society" (Letseka, 2011:48).

The then Minister of Education, Professor Kader Ismail, posed that for South Africa to move forward towards being a brighter, democratic nation, our education system had to promote the qualities or virtues of: equity, tolerance, multilingualism, openness, accountability and social honour (DoE, 2001:3). As discussed in Chapter 1, the concept of "virtue" as posited by MacIntyre (2007) and McLaughlin (1992) refer to the actions of the citizen living in a community and how the results of these actions would affect the collective.

"Virtue" may describe the character or behaviour of the individual. Kelley (1995:25) suggests that "virtue" may be perceived as the amount of goodness or courage that the individual

possess and how these behaviours' are vital in upholding the ideals of the society the he resides in. Dewey (2005:415) continues with what he perceives as "virtue" by summarising that to have "virtue", the individual needs to be "moral". Dewey (2005:415) explains that by being "moral", the individual would need to have character traits such as "truthfulness, honesty, chastity, amiability..." (Dewey, 2005:415). The application of these "morals" in everyday life would ensure that the individual was connected to their society as he would act in such as manner which would not be detrimental to the society he lived in (Dewey, 2005:415).

Green (2004:108) gives her description of the virtues which must be practiced by the democratic citizen as being "a sense of responsibility, a concern for justice, and the capacity for critical judgement, about which there would be little argument".

Thus, a definitive description of what is meant by the concept of "virtue" cannot be made and the reader may be misled into thinking that these descriptions are the only concepts perceived as being the virtues of the democratic citizen. It is the combination of these above mentioned morals as well as the application of them in reality through "reasoned judgement and considered action" (Green, 2004:108) which may realise the ideal democratic citizen. However, for the democratic citizen to be created this knowledge must be imparted to the citizen somehow. Thus, for the fostering of this ideal democratic citizen, it is the responsibility of the education system of the country to promote these virtues which may lead to the creation of a democratic citizen (Covaleskie, 2006:57).

In a school environment, learners develop mechanisms which guide them in their interaction with others. Education thus aims to educate learners as to what is meant by being a "good citizen" by implementing guidelines for educators in which citizenship education is taught within lessons and not as a separate entity (Davids & Waghid, 2012:24). Here , learners are exposed to situations where they learn when to question what is being taught as well as when not to question what is taught; how to develop questioning skills where the dignity of others is still maintained; to imagine how other learners of individuals live in very different environments to their own and lastly—although not definitively, to understand that they are part of a homogenous group or a member of a society which is more diverse in its thinking and actions what is normal to their social environment. It is in a schooling environment where learners are guided in their thinking to accept, respect and understand the diversity of others

who are perceived as being culturally different to them. This is developing a criticality to engage in a democratic society as a citizen as this is a practical application based on theory, or praxis. An example of where democratic citizenship is taught as part of a subject in the curriculum may be experienced in the study of Natural Sciences as posited by the main question in this study.

Within the Natural Sciences CAPS document, a section which is known as the process skills, (DoE, 2011a:10-12) is dedicated to providing guidelines as to how learners may physically engage with the content and each other in the classroom. It provides the envisioned skills which learners may implement to shift from theory, to practise. Learning should therefore be focused on the "search for deep, rather than surface meaning" (Wales & Clarke, 2005:8). Furthermore, Wales and Clarke (2005:1) posit that teaching citizenship in schools allows the educator to employ a variety of teaching strategies in lessons. Although these strategies may develop skills such as debating, presentations, role play and how to conduct group discussions, it is still an action which is initiated by the educator. In doing so, the learner is "coached" to enact a scenario involving a pre-determined lesson with a pre-determine outcome.

Because lessons are set a specified time, educators are forced to become creative in their lessons planning so to ensure that some form of the democratic citizenship principles are enacted. Thus, the focus which is highlighted by Wales and Clarke (2005:8) above may not always be realised within lessons due to the strict guidelines specified in the Natural Sciences CAPS document. Through the application of these skills, learners will be taught how to debate in a socially acceptable manner where the dignity of fellow learners is protected. Should a democratic culture be fostered at a primary level, the school must provide an education to its learners with a frame of reference for a democratic educational philosophy where the following aspects are highlighted : developing intellectual abilities and critical faculties among students; establishing an inclusive climate for all students where all learners are included and accepted irrespective of their background; and equipping learners with problem-solving skills to find rational solutions to problems.

The purpose of implementing these educational values is to promote the skills needed to participate as a contributing citizen in the social environment where the liberties and

responsibilities which these rights awards to others, are respected and enforced by the state (DoE, 2001:23).

It must be noted that democratic citizenship can only exist if people make a concerted effort to want to change, as each person is responsible for their own actions as far as possible and within reason (Enslin & White, 2003:111). If change is forced on citizens, it is undemocratic. If citizens do not participate in decisions made for them as posited b deliberative democrats, it is also undemocratic as it is left to the government to make decisions concerning the well-being of its citizens. A fine line therefore exists between what constitutes democratic citizenship and what does not.

In South Africa, what bound the people together was the shared belief by most of its members that as a nation, South Africans shared a common history and were working towards a common and shared future where the mistakes of the past could be rectified with time and public and political efforts. The Swedish nation has a common national identity, albeit having several different languages and several different cultures, the differences are negligible compared to South Africa's diverse culture. The Swiss however, had no history of antagonism between these various factions. Thus the advent of the ideal common future was wholly possible in Switzerland and required minimal intervention by its stakeholders to implement (White, 1997:15-17).

Thus, Davids and Waghid (2012:23) assert that citizenship holds different levels of value to each individual citizen. In South Africa this "value" is based on the lasting positive or negative role which apartheid has played in the individual's life. These effects are listed by Davids and Waghid (2012:23) as being the individual's social, political, economic and emotional habitat which has as a result, shaped the individuals thoughts of self-worth and respect for self and others. The purpose of teaching NS in schools is to promote the acquisition of knowledge and to share this knowledge with others (DoE, 2011a:8-9). It acts as a bridge between discovering new phenomena and the application of these findings to make society and the environment more sustainable for future generations. In doing so, citizens are taught how to be practical in their everyday living by considering the ethical consequences of their actions in society and the environment (DoE, 2011a: 9).

Within this reconsidered view, not only do citizens respect the rights of others, they are accepted as being participating members in the social environment. They are therefore

responsible for their actions which mean that they should allow other members of the society to express their thoughts whilst suspending any judgments about what is being said as freedom of speech is a liberty enforced by the constitution (Waghid& Davids, 2013: 16). Here, Martha Nussbaum's "capacity for Socratic self-criticism" (2006:387) should be practised in that individuals must be able to think for themselves and make decisions about what is right or wrong without having to consult others. Learners should be taught how to think and how best to use this knowledge to better themselves and the society which they interact in through the implementation of this knowledge. When learners are capable of applying the theory which they have been taught in real-life situations, they have the capability of being self-critical as they will need to firstly question their own knowledge and the underlying reasons for sharing this knowledge. How this knowledge may be attained is discussed in Chapter 3. Here, the research methodology and method for analysing the NS CAPS document is discussed.

CHAPTER 3: RESEARCH METHODOLOGY AND METHODS

3.1 Introductions to research

Research refers to "systematic inquiry" which is characterised by guidelines for procedures which are subject to strict criteria such as validity, reliability and representativeness (Hitchcock & Hughes, 1989:5). However, the term of "representativeness" is a generalisation as it is a variable. Within a school context, no criterion is the same as context, social background or economic status to mention a few, will vary.

The researcher should take these factors into consideration when making recommendations. "Social research" refers to both the collection of and analysis of information on the social world in order to understand and explain the world better (Hitchcock & Hughes, 1989:5). In reviewing the Natural Science policy within the CAPS document a qualitative research methodology is used situated within a post-positivist theoretical perspective employing critical discourse analysis (CDA) to further investigate the method of "relationships of dominance, discrimination, control and power" as manifested in language (Wodak & Meyer, 2009:10).

3.2 The differences between research methodology and research methods

For the purpose of this research, a qualitative research methodology will be used and this methodology will be situated within a post-positivist theoretical perspective and will employ critical discourse analysis (CDA) to further investigate the "relationships of dominance, discrimination, control and power" as manifested in language(Wodak & Meyer, 2009:10).

The purpose of this conceptual analysis is to provide the framework as to how the Natural Sciences CAPS document will be analysed to prove or disprove the theory that this particular document may or may not engender democratic citizenship in the Natural Sciences classroom.

The methods used to investigate the research question will be that of policy analysis and text analysis. Post–positivism and positivism are research paradigms used within the methodology.

Research methods refer to the tools needed to construct research.

Each tool represents a different facet of information or technique that is needed to create a cohesive, well informed researched paper or study. Methods used are dependent on the purpose of the research and may include conducting surveys and interviews, analysing or collecting documents, observing people in what they say and do (Hitchcock &Hughes, 1989:20).

3.3 Methodology

The research methodology employed within a research paper provides the reasons why the researcher has selected various tools. Research methodology creates the theoretical perspective or paradigm in which the research is to be constructed and understood (Clough & Nutbrowne, 2007: 23-35) and serves as a lens to approach problems in a specific way. Methodology can therefore be termed as the process in which the researcher should carry out research in order to prove or disprove the assumptions. It is therefore the procedures employed by the researcher in a research situation (Hitchcock &Hughes, 1989:20). Two research methodologies will be discussed below, namely quantitative- and qualitative research as methodologies.

3.3.1 Quantitative research methodology

As a research methodology, quantitative research is associated with deduction and reasoning from general principles to specific contexts. This methodology is firmly rooted within the positivist approach and is more associated with scientific method where relationships, causes and facts are the emphasis of what is being studied (Wiersma & Jurs, 2005:13-14). Harwell (2011:149) goes further in saying that the researcher makes use of this methodology when the objectivity of what is being studied is maximized. Also, the researcher aims to generalize his/her findings in such a manner that the methods used are replicable and can fit a generalised type of study.

3.3.1.1 Advantages of Quantitative Research

  i. Any biases are set aside to ensure objectivity.
  ii. A plethora of research instruments are used such as tests, interviews or surveys to collect data (Harwell, 2011:149).

3.3.1.2 Disadvantages of Quantitative Research

i.   Quantitative data is more theory based and these theories are not always explicitly identified.

ii. The researcher is detached from the study (Wiersma & Jurs, 2005:14-15).

iii. Quantitative research methodology emphasizes the use of hierarchical linear modelling where the process which the researcher follows may be replicated for future use (Seltzer & Rose, 2006:477; Wiersma & Jurs, 2005:13-14).

3.3.2 Qualitative research methodology

A qualitative research methodology is concerned with the process, rather than the outcome of the study. This research methodology furnishes the study with the needed tools to view and analyse the world within an interpretive and naturalistic approach (Bogan & KnoppBiklen, 2007:6; Denzin & Lincoln, 2011:3-4).

3.3.2.1 Advantages of Qualitative Research

i.   The use of multiple methods gives the researcher a clearer insight to the research problem.

ii. Data is analysed inductively- researchers do not search for data to prove or disprove hypotheses prior to the study, abstractions are built as the particulars of what has been gathered are grouped together (Bogan & KnoppBiklen, 2007:6; Denzin & Lincoln, 2011:3).

3.3.2.2 Disadvantages of Qualitative Research

i.   Qualitative research is used in many separate disciplines; hence it does not have a distinct set of methods or practices that are entirely its own (Denzin & Lincoln, 2011:6).

3.3.3 The methodology used for this particular study

The qualitative research methodology has been selected as the framework within which this study will take place. Qualitative research uses a variety of empirical materials and methods to study phenomena. This includes case studies, personal experiences, introspection, life stories, cultural texts and productions, observational, historical and visual texts that describe routine and problematic moments and meanings in individuals' lives (Denzin & Lincoln, 2011:3).

The use of multiple methods enables a clearer insight to the research problem. Data is analysed inductively- researchers do not search for data to prove or disprove hypotheses prior to the study, abstractions are built as the particulars of what has been gathered are grouped together (Bogan & KnoppBiklen, 2007:6; Denzin & Lincoln, 2011:3).

Qualitative research methodology appreciates that the above mentioned variables have an effect on the actor's life and that the outcome of these will influence the dynamics of the educational institution operated in. These factors cannot be quantified for analyses. The observational skills of the qualitative researcher which will lend credence to the importance of the actions, ideas, values and meanings which are created through the experiences of the actors and the impact that these experiences have on the community that they operate in (Hitchcock & Hughes, 1989:26).

Another deciding factor for this methodology is that it places the individual actors at the very centre of the study. Here their history, context, biography and cultures are studied to better understand the affects they have on the individual's life. The researcher recognises that the actors, namely the learners and educators in the schooling community, have internal and external factors which impact their lives.

3.3.4 Positivism and post-positivism research paradigms

McGregor and Murnane (2010:419) posit that a paradigm is a "set of assumptions, concepts, values, and practices that constitutes a way of viewing reality". Furthermore it proposes to highlight a pattern occurring in various phenomena. Two paradigms are discussed for clarity namely the positivist and post-positivist research paradigms.

3.3.4.1 Positivism

Positivist researchers assume that there is only one way in which to ensure that data is true and reliable - to make use of empirical methodology which involves experiments and observations (Rohmann cited in McGregor & Murnane, 2010:422). However, Hitchcock and Hughes (1989:16) posit that these researchers are concerned with the systematic approach to inquiry. This approach assumes that systematic inquiry must be scientific in its approach- it must be quantifiable to give credence to its reliability.

3.3.4.2 Advantages of positivism

    i.   Study is reliable and the process can be repeated when followed.

    ii.   The research is unbiased and objective (McGregor & Murnane, 2010:422).

3.3.4.3Disadvantages of positivism

    i.   It is an isolated study where little consideration is given to the individual inputs of the test subjects.

    ii.   Most research is contrived and created under a controlled setting in a laboratory (McGregor & Murnane, 2010:422).

3.3.4.4 Post-positivism

The post-positivistic research paradigm assumes that there are various methods of drawing conclusions from a study other than using the scientific method.

Rather than testing hypothesis, post-positivistic research generates hypotheses through inductive reasoning. Instead of trying to explain how something operates, scholars analyse their research to understand why people or the object of study acts or reacts in the manner they do (McGregor & Murnane, 2010:422-423). These researchers argue that it is vital to discover what the data means through interpreting the results by analysing the events or actions which have resulted in the data (Hitchcock & Hughes, 1989:16).

This paradigm aims at revealing the power relationships and structures which they operate in as there has been a decided concern regarding the data which cannot be analysed empirically. Biographical aspects, gender issues and equal opportunities to mention a few studies, have been highlighted more often as parts of studies or as a study in their own right as issues arising in schools and classrooms.

3.3.4.5 Advantages of post-positivism

    i.   The voice and role of the researcher and the input of the participants are apparent in this study.

    ii.   Humans are seen as central to the research process, rather than isolated from it (McGregor & Murnane, 2010:423).

3.3.4.6 Disadvantages of post-positivism

i. It is claimed that the study is unbiased as the views of the researcher and the participants are taken into account (McGregor & Murnane, 2010:423). The study is therefore not based on Science, but rather on human nature.

3.3.5 The research paradigm used for this particular study

For the purpose of this study, a post-positivism paradigm is best suited and will frame this study.

Post- positivism in social sciences, as opposed to positivism would be more suited to fostering the virtues of democracy in a society. Unlike positivism which underlies the technical orientation of policy analysis, post-positivism underpins a participatory aspect in which the actors involved have an active role in the initiatives posited by the policy affecting them (Papanagnou, 2010:6).

The relevance which the post-positivist paradigm has for education is apparent as education policy and its far-reaching effects play an integral role in both the educator and learners' schooling career - be it positive or negative. By using this paradigm in conjunction with the CDA method, it will allow the researcher to critically review the document's discourse in a) terms of social power, b) social dominance, and c) the inequalities promoted due to the language used in wording used in the policy document. The question is whether the language of the document creates or hinders the necessary capacity to engender democratic citizenship in the NS subject at Grade 7 level. A post-positivist research method will be employed by the researcher for this analysis because of this human aspect.

The researcher will analyse the documents and present an argument about these observations. Thus, the research will not be unbiased or objective. In social science research there are many variables that cannot easily be manipulated in order to achieve the same results every time.

The purpose of this analysis is to "attempt to organise, account for and provide explanations of data, so that some kind of sense may be made of it" (Hitchcock &Hughes, 1989:73) and in doing so, recommendations and conclusions may be drawn from the results of this analysis to prove or disprove if the NS CAPS document engenders democratic citizenship within the Natural Sciences classroom. The documents reviewed in this study is the following:1)

Curriculum and Assessment Policy Statement (CAPS) document within the subject Natural Sciences (senior phase including Grades 7 to 9), the 2) Outcomes Based Education (OBE), Revised National Curriculum Statement (RNCS) for Grades R-9; 3) The Manifesto on Values, Education and Democracy, 4) 47th International conference on education, 5) Constitution of the Republic of South Africa, 6) various books and journal articles pertaining to critical discourse theory, democracy, citizenship and democratic citizenship.

3.3.6 Critical discourse analysis

The concern brought about by researchers is not about the content being analysed, but the method in which it is being analysed and the methodology in which the studies have been conducted (Hitchcock & Hughes, 1989:16; McGregor & Murnane, 2010:422-423).

A critical discourse analysis will be used as the method in which the Natural Science curriculum (Grade 7) within the CAPS document will be analysed. The purpose of critical discourse analysis (CDA)as method is to analyse how social power abuse, dominance, and inequality are enacted, reproduced and resisted by text and talk in the social and political context (Laclau, 2007:541; Van Dijk, 2001: 352).In CDA the notion of 'power' often arises. 'Power' refers to the discourse used in a document and the effects that this discourse has on actors in society.

This study will only investigate the discourse used in the document as it is this discourse which may be used to challenge the differences in the distribution of power in social structures. This type of study allows the researcher to become actively involved in the study by means of interrogating the texts or spoken language being analysed and thus formulate a theory on what is being said through the text. Through highlighting the power relationships occurring within this analysis, the reader has a better insight how the implementation of a new policy document in the schooling environment may influence the learners being taught as well as the methods used by the educators to teach these lessons.

3.3.6.1 What is CDA?

CDA focuses on the language used in society and how this language influences the "power" of individuals as well as the power struggles which occur as parties or individuals seek a "type" of social order (Fairclough, 1989:17). In keeping within the framework of conceptual

analysis, Critical Discourse Analyses will be discussed in terms of its individual concepts namely: critical, discourse and analysis. What is meant by "text" will be discussed as well. Once these concepts have been analysed, the concept of Critical Discourse Analysis in its entirety will be analysed as well as its purpose as the method being used to analyse the lay data, namely policy documents, in this study. This analysis aims to provide the clarity in understanding why the CDA method is being employed for this study in particular. Secondly, the results achieved from employing the CDA method in analysing the Natural Science Curriculum and Assessment Policy Statement for Grades 4 to 9 will be studied. These results may clarify whether the Natural Sciences CAPS document engenders democratic citizenship in the Natural Sciences classroom at a Grade 7 level or not. The concepts critical, discourse and analysis will now be discussed.

3.3.6.1.1 Advantages of critical discourse analysis

i. Critical discourse analysis tries to explain the discourse structures being studied in terms of their social structure.

ii. CDA focuses on the ways discourse structures enact, confirm, legitimate, reproduce, or challenge relations of power and dominance in society (Van Dijk, 2001: 353).

3.3.6.1.2 Disadvantages of critical discourse analysis

i. Discourses rule out other methods of thinking, talking and acting. It has been found lacking in sophistication and coherence at times (Maclure, 2003:178,187).

ii. If learners are not accustomed to speaking in certain ways or listening for information in a certain way, they will not understand what is being said. Only if they are taught how to extract information and partake in a discussion, they may then engage in this interaction.

3.3.6.2 Definition of terms

The concept "critical", has a duality. It alludes that the concept may be used in either a positive or unbiased context or a biased and negative context, depending on the stand of the author.

When used in a positive or unbiased context, it may refer to the writer expressing or analysing the merits and faults of the situation being described. An unbiased view of the information is given to the reader. Although this unbiased positive description highlights

faults and merits, it does not necessarily have negative connotations as it seeks to lend clarity to the situation it is being used in through the reader analysing or interpreting the context of its use. This concept "critical" allow the readers to draw their own conclusions based on what they are seeking and what previous knowledge they have regarding the situation. The second and more condemnatory description of the concept "critical" is one that refers to an adverse, censorious or disapproving situation (*Collins English Dictionary,* 2011*)*. Here, the reader is faced with a biased and negative context without having the opportunity to draw conclusions. The matter has been decided for them by an outside source, namely the writer.

The purpose of "critical" as a concept in this study, will be to highlight the connections between the language used in the Curriculum and Assessment Policy Statement and the outcomes which may be realised should this policy document be utilised in its entirety. Thus, the connections between hidden power and language use which may not be obvious to the common citizens may be analysed (Fairclough, 1989:5). The readers will thus be afforded the opportunity to draw their own conclusions based on how the language or discourse used is described. For clarity, why the term "discourse" is being used in terms of Critical Discourse analysis rather than Critical Language Analysis will now be analysed as well as what these mean with regards to communication.

The study of language used in a grammatical sense is called linguistics. Grammar includes aspects such as the sound which is made when the language is spoken, the grammatical structure or syntax of sentences and the meaning or semantics of the language being used. Linguistics according to Fairclough (1989:6-7) has been lauded with achievements through its acknowledgements that language is central to human interaction but it concentrates its efforts on characterising language as an abstract rather than as a practice.

Fairclough refers to Ferdinand de Saussure as being the founder of modern linguistics study. Linguistics according to de Saussure (cited in Fairclough, 1989:7) is concerned with langue and parole. Langue referrers to the actual language being used by the citizens in a community, it focuses on the social aspects of language use. Parole however, referrers to what is said or written by a specific individual, without the input of the collective. De Saussure continues by saying that modern linguistics has two base assumptions. Firstly, that language use within a community is relevant to that particular community in that space and time and should be studied as such. Secondly, language used should be studied in a static

context and not in a dynamic context as "dynamics" alludes to changes through time. In this regard, one may use the South African context as an example where the language which was used in the apartheid era in social spheres and communities was vastly different to what is being used today in its democratic space. Thus one needs to study occurrences and the results of these occurrences within its given timeframe before a critical stand can be taken with regards to these occurrences.

However, the concept of language refers to a human method of communication which is either written or spoken in a structured manner. A country may have a common tongue language used by all of its citizens which desalinate them as being citizens or dwellers of a particular space in time (Fairclough, 1989:2). Language style also changes from space to space (Fairclough, 1989:2). Citizens all residing in one country may have a common language but various dialects of it. But, it is still part of the common language which makes communication between these citizens possible, albeit challenging. Thus, using language through writing or speaking is the most common form of social interaction between people (Fairclough, 1989:2).

It must be noted that these are not the only methods of communication but the most conventional and socially acceptable methods. Language use in various social orders such as political, social or cultural spheres reflects the ideals of those individuals interacting within a particular sphere. It is because of this social aspect that this study is focussed on discourse analysis and not language analysis.

Language in itself represents a standardised norm which all citizens of a community share but also have in common with the state or country they reside in. Being a "citizen" requires the individual to partake in activities to be regarded as part of the collective. Sharing a common linguistic base (Benhabib, 2002:162) from which to communicate and interact with others in a meaningful way, is regarded as being an activity which makes a citizen a citizen. Meaningful communication is vital between learners and the educator. If this interaction does not occur in the classroom, learning and teaching cannot take place.

For the purpose of this study, the language used in the NS CAPS document will be focussed on. The purpose of this focus is to ascertain if the process skills stated in this document will engender democratic practises in the NS classroom and further afield.

However, Fairclough disagrees with the supposition that having a national language or langue, unifies individuals as a collective. He claims that the unification of people under the umbrella of language use is a ploy implemented by politicians to create a false feeling of national identity. Fairclough continues by positing that what language the individual uses or speaks, does not create their identity or thought processes. Rather than assuming that the langue used in a socially determined sphere is homogenous and thus unifying, it must be considered how the diversity of citizens, their social standing and the power struggles which determined their current context and lifestyle have influenced their national identity. In reality, how language is used as a result of these determinations is what creates the identity of a citizen as it is language used in a socially determined sphere (Fairclough, 1989:22-23).

Discourse represents the connections between language and power and is claimed to be beyond any language use. For discourse to become active deliberation, the topic of conversation must be clearly stated. In the NS classroom, this topic is introduced by the educator who guides the conversation by way of applying the suggested discussion topics as given in the NS CAPS document. Thus, the language and what action may be reached through the implementation of the language used in the NS CAPS document is focussed on. It is used to describe a great many aspects of written and spoken work which may include a policy, historical monument, political strategy and narratives - text, conversations, talk, and speeches. Various forms of discourse are found as well such as racist discourse, gender discourse, discourses of un/employment, media discourse and so on (Wodak& Meyer, 2009:2-3).

Discourse authors have their own view on what it is that is being referred to when discourse is spoken about. However, fort the purpose of this particular study, the work of Norman Fairclough (1989) regarding his theories on Critical Discourse Analysis (CDA) will be utilised as the tool for analysing the lay documents used.

Jaworski and Coupland (1999:3) refer to discourse as being the language used in a particular social order but also that it is this language which shapes said social order. The language in use represents the unequal relationship between language use and the unequal relations of power and people in power with those who are not. People in power are capable of manipulating the language to serve their needs whereas those who are not in these positions may not have the required language skills to promote their arguments.

Language in its entirety no longer serves as a form of communication only. It is a powerful motivator when used by those citizens who are able to artfully manipulate the way language is used to ensure the success of their agenda. Each person is affected on a personal, economical and political level by the language used by those in power.

Fairclough (1989:3) warns that language use is not the only source of power which may cause the deprivation of people. Concrete, physical force coupled by the laws written into the constitution of a country will highlight the power which language can have. A prime example of this interconnected power is that of the post-democratic era under which South Africa was ruled by an apartheid government. Under these apartheid laws which were legalised by the Constitution, stated that people could physically removed from their homes, denied equal education and means of employment (Fairclough, 1989:1-3). The concept of "analysis" will not be discussed as a singular concept but as part of what is meant by Critical Discourse Analysis. The rationale for "analysing" the lay data being studied will be discussed as well as why this particular lay data is being utilised in this particular study.

As a concept, "analysis" describes a detailed examination or investigation of phenomena so that its individual components may be separated into their unique themes or base elements (in Sciences). Thus, for this study, a detailed examination of the Natural Sciences Curriculum Assessment Policy for Grades 7 to 9 documents will take place. The results of this data will then be classified under specific themes. From these themes, the question whether the Natural Sciences as subject taught at a Grade 7 level under the auspices of the CAPS document has the capacity to engender democratic citizenship, may be answered.

The concept of "power" as it is a central feature of CDA. As a concept, "power" denotes that there is an imbalance in the dominance or relevance with regards to the context in which the concept is being used. Power relations are intentional in that they give relevance to the context in which it is being used by stating its aims and objectives to the context at hand (Foucault, 1978:94-95). In reference to this study, the NS CAPS document is transparent in the specific aims being promoted with the intention of having learners actively engage with the content being taught as well as with their peers and educator.

In CDA, the researcher is interested in analysing how the use of language in texts or orally delineates the balance of power between social groups, either by enforcing dominance over

these societies, South Africa's gross racial inequalities pre-1994 being an example (Wodak & Meyer, 2009:9) of how groups have resisted the influences of these so called "powerful" societies through asserting their own will through the reproduction of texts or oral discourses (van Dijk, 2001:63). 'Power' is thus concerned with control- where the more powerful citizens control the less powerful citizens through what they say or do; how they relate to these non-powerful citizens and what these non-powerful citizens are and are not capable of doing (Fairclough, 1989:46). Power, therefore, is central to the method of analysing what is written as well as the time, space and context it was written. It aims at creating a wider framework in which the dynamics between the creators of the text and those societies being targeted may be analysed.

Wodak and Meyer (2009:12) posit that text documents are the sites of struggle. When formulating a document, such as a government policy, the discursive differences and ideologies of various individuals, each having their own discourse style but all working towards a pre-determined outcome, are negotiated. The end product is the dominant ideologies which are published. It is with this that brief analyses of the concept of "text" will be given as this study focuses on the analysis of text documents (Wodak & Meyer, 2009:12).

A "text" is a product which has been produced by the input of others - namely those in power. It cannot be regarded as being a process, even though the creation of the text document followed the relevant steps as mentioned above: input is given namely, the information; a selection process is carried out where the information required to achieve the pre-determined outcome is selected and lastly the outcome is the process of interpreting and engaging with the text through the application of previous knowledge to the given content and the context it is read in (Fairclough, 1989:24). The understanding of these texts and the application of these interpretations in reality is what discourse analysis aims to uncover. As discussed, discourse analysis seeks to analyse the how individuals engaging with information reacts on it. It aims to uncover power struggles in texts, where the more "powerful" voices will be reflected in what is recorded.

The reaction of the person engaging with the text is based on their own contexts as well as on the assumption of what they should know and what other, more qualified or knowledgeable people know. These assumptions are based on conventions which have been instilled in human beings at an early age where it is assumed that the more qualified or knowledgeable

individual is better equipped to make decisions concerning the less qualified person (Fairclough, 1989:2). Therefore, what is written in a text must be the only way forward. Examples of these assumptions are evident in everyday situations where individuals assume that they are not capable of having control over situations which affect their lives. These assumptions have created ideologies which are closely linked to what is meant by "power" as they are born from the conventions which have been fostered by those in power to legitimise their superior social standing (Fairclough, 1989:2). It is with this brief analysis of the concepts of critical discourse analysis, that CDA in its entirety will now be discussed in greater detail.

3.3.6.3 Critical discourse analysis (CDA) of the NS CAPS document in its entirety

Discourse analysis is the realisation by researchers and authors' of language and language study that language, action and knowledge are inseparable (Stubbs, 1983:1).

One concept influences the outcomes of the next. Instances of these observations are apparent in how language influences the actions of people, governments and the global economic community. More importantly, it is the social interaction and action which language allows that makes these utterances or texts come to life. And in the same instance, communication cannot happen without some form of prior knowledge held by the speaker and listener. Thus language, action and knowledge conjunctively are the proposers of social, political and economical activities the world over.

Although there are variations of discourse analysis posited by various authors such as discourse analysis or studies (DA or DS) critical discourse analyses (CDA) and critical discourse studies (CDS), these studies or analyses all have a common thread: how the power behind the language used in narratives, texts and as a result the actions occurring as a result of the knowledge gained from these narratives or texts, influences societies. These similarities occur in seven common dimensions (Wodak & Meyer, 2009:2).

First is that natural occurring language is analysed and studied (Wodak & Meyer, 2009:2). Natural occurring language is the common vernacular used by people in everyday situations. This vernacular does include formal as well as informal language use, depending on the context it is being used in. The language studied is not abstract or invented examples of language use.

Secondly, the analyses are focused on larger chunks of texts and narratives and not necessarily on individual words (Wodak & Meyer, 2009:2). This gives the researcher a greater insight to what is being proposed by the text or narrative as the power struggle occurring may be more apparent in analysing the collective works and not in analysing single instances of words. Single instances of words used, may not give indication of the context, site and space in which the text and narratives occurring. Whereas analysing the whole or chunks of the whole may be more insightful. This analysis allows for less bias occurring between the researcher and the text and narrative as the power struggle is more obvious.

Third, the study of discourse analysis goes beyond grammar use in sentences (Wodak & Meyer, 2009:2). It is geared towards the results of the actions and interactions which occur after the text has been read or the narrative listened to. To reiterate, discourse is concerned with the power struggle occurring in language and the results thereof and not how language is used grammatically as posited by Saussure's language.

The fourth, fifth and sixth commonalities are interconnected with each other. Here, the method of analyses studies non-verbal cues such as gestures, multimedia and images. These factors are considered to be part of discourse analyses as well (Wodak & Meyer, 2009:2). With modernity and the proliferation of social media massaging, non-verbal cues are a more apparent means of communication than what it was in the past. Here, political, economic, social or any other newsworthy statements are made and are easily accessible to the public. Thus, the connections between language, action and knowledge are intensified in a quicker timeframe than previously encountered. Power struggles in the discourse used is even more apparent as these media releases may be countered almost instantaneously by opposition parties. The dynamic interaction between individuals the world over are connected through social media. Here the contexts which connect these individuals are studied (Wodak & Meyer, 2009:2). The language used through these interactions may be analysed for trends amongst citizens on a global level. The last factor connecting these various strains of discourse analyses or studies is the phenomena of text grammar and language use (Wodak & Meyer, 2009:2). Here, speech structures, rhetoric and other aspects of text and narratives are analysed. Meaning is drawn from how these phenomena have been used in a text and narrative and how these phenomena influence the meaning of the power struggle within the text. It follows Saussure's definition and application of language.

The significant differences in DS, CDS or CDA, lies in the approach that these authors take in analysing discourse. For the purpose of this study, the critical discourse analysis (CDA) model will be employed. CDA embraces all the factors mentioned above but for number seven. CDA is not concerned with the analysis of textual and grammatical phenomena. CDA focuses on studying the social phenomena occurring within the language discipline and thus this method requires a multi-methodical approach and not an approach which will be confined to grammatical phenomena (Wodak & Meyer, 2009:2).

CDA is concerned with the process of analysing and demystifying ideologies of power concentrations through the investigation of lay data which include policy documents, government gazettes and journal articles. In conjunction with this analysis, CDA researchers aim at making their studies retroductable. Retroductable refers to the level of transparency that the analyses should have. The purpose of this transparency is to ensure as far a possible that the reader may be able to understand the textual analysis occurring as a result of CDA (Kendall, 2007: 6). In doing so, the reader may trace the source of the researcher's argument through clearly identifying the mechanisms behind their study (Wodak & Meyer, 2009:3).

This hypothesis requires the readers to make use of critical thinking and reasoning skills. In doing so, the researcher maintains a level of self-reflection regarding their study but allows the readers to draw their own conclusions based on their own thought processes, assumptions, ideologies and contexts (Wodak & Meyer, 2009:3). Thus, by employing CDA as a lens through which to analyse data, the researcher may employ various methods in gathering data. CDA allows for these methods to be employed as it is concerned with the analyses of the data and not how the data was populated. The underlining purpose of CDA is to shed light on any social disparities or inequalities occurring within texts or narratives (Wodak & Meyer, 2009:32). It is for this purpose that Natural Sciences CAPS document will analysed to prove or disprove if any disparities or inequalities are apparent within the texts. The purpose of CDA in this study is to provide clarity and transparency to educators. This knowledge aims to provide them with a framework of expectations to work towards as stated in the process skills (DoE, 2011a:10-12).

It is with this understanding of what critical discourse analysis is that the application of this information will be employed in the following section where the language used in the Curriculum Assessment Policy document in Natural Sciences, Grades 4 to 9 will be analysed for evidence of underlying power struggles occurring within the document. Evidence or lack

of evidence of power struggles within the Natural Sciences CAPS document may aid the researcher in answering the main question posed in Chapter 1 which posits whether or not the implementation of this policy document in Grades 7 to 9 may or may not engender democratic citizenship. Thus, CDA aims to clarify as well as whether or not these hidden power struggles may positively influence the outcomes of the application of the knowledge which the CAPS Natural Sciences document aims at imparting.

3.3.6.4 Critical discourse analysis and the process skills
The purpose of this study is to ascertain whether or nor not democratic citizenship may or may not be engendered in the Grade 7 Natural Sciences classroom. CDA is the lens through which the CAPS NS document will be analysed. As of 2012 South African schools have adopted the Curriculum Assessment Policy Statement (CAPS) as its national curriculum. This policy document is the third curriculum to have been instated in South African schools.

The CAPS document, however, differs from its predecessors as it provides the educator with specific aims that must be taught in the NS classroom as well as the framework   to teach specific process skills as part of the NS lesson. The application of these process skills aim to provide learners with the opportunity to develop a range of practical skills as well as the knowledge needed to execute these skills in everyday life, in their the community and to become part of a skilled workforce in the economic arena on leaving school(DoE, 2011a:10).

It is these process skills that will be analysed for clarity as well as to ascertain their relevance and purpose in the Natural Sciences CAPS document. More importantly for this study, whether or not they may engender democratic citizenship amongst learners within the Grade 7 Natural Sciences classroom. This analysis of the process skills will be achieved by making use of critical discourse analysis (CDA) as the lens through which each of the three process skills will be analysed. The study will then continue in ascertaining the process skills relevance by suggesting methods to teach democratic citizenship in the Grade 7 classroom. Before these process skills are discussed, a brief conceptual analysis of the terms "process" and "skills" will be given.

What is meant by the concept "process" cannot be clearly defined, as a process will follow a variety of steps which are dependent on the envisioned or required outcome. Process, can thus be conceptualised as a series of linked and interlinked procedures which require an

input-action, a procedure which will change the input into the envisioned output-reaction. Within an educational context, the educator gives their input- lessons taught, the learners go through a process of making connections between what they have interpreted and connecting this new knowledge with their prior knowledge. The output will be whether a level of understanding was reached or not. Thus for a process to occur, the learner will require a level of skill in order for the process to be executed at an acceptable level. Again, in an educational context, this "acceptable level" may refer to the learner achieving a grade or level of competence which will allow their progress in a subject or phase.

The concept "skill" can be described as the ability to perform an activity with ease and being knowledgeable about the steps or processes which are necessary to fulfil the requirements to perform the skill. In an educational context, skills may refer to the ease with which learners make connections between the concept taught or what their level of competence is in subjects taught. Thus, the CAPS Natural Sciences document has specific processes and skills which form part of the policy document. These specifications and skills are called the process skills.

In the Natural Sciences CAPS document there are three specific aims which form the framework for lessons to be taught as well as three cognitive and practical process skills that learners will be able to develop in Natural Sciences by means of the application of the skills taught in this specified framework. These aims are as follows: Specific aim 1: 'doing science'; Specific aim 2: 'Knowing the subject content and making connections' and Specific aim 3: 'understanding the uses of science' (DoE, 2011a:10).

The process skills in their entirety are as follows:
i. Accessing and recalling information – being able to use a variety of sources to acquire information, and to remember relevant facts and key ideas, and to build a conceptual framework,
ii. Observing – noting in detail objects, organisms and events,
iii. Comparing – noting similarities and differences between things
iv. Measuring – using measuring instruments such as rulers, thermometers, clocks and syringes (for volume),
v. Sorting and classifying – applying criteria in order to sort items into a table, mind-map, key, list or other format,

vi. Identifying problems and issues – being able to articulate the needs and wants of people in society,

vii. Raising questions – being able to think of, and articulate relevant questions about problems, issues, and natural phenomena,

viii. Predicting – stating, before an investigation, what you think the results will be for that particular investigation,

ix. Hypothesizing – putting forward a suggestion or possible explanation to account for certain facts. A hypothesis is used as a basis for further investigation which will prove or disprove the hypothesis,

x. Planning investigations – thinking through the method for an activity or investigation in advance. Identifying the need to make an investigation a fair test by keeping some things (variables) the same whilst other things will vary,

xi. Doing investigations – this involves carrying out methods using appropriate apparatus and equipment, and collecting data by observing and comparing, measuring and estimating, sequencing, or sorting and classifying. Sometimes an investigation has to be repeated to verify the results,

xii. Recording information – recording data from an investigation in a systematic way, including drawings, descriptions, tables and graphs,

xiii. Interpreting information – explaining what the results of an activity or investigation mean (this includes reading and understanding maps, tables, graphs). A Translation Task requires learners to make sense of information and convert the information into a different format e.g. from information captured on a table into a graph format and or written format,

xiv. Communicating – using written, oral, visual, graphic and other forms of communication to make information available to other people,

xv. The scientific Process is a way of investigating things about the world. Scientists use this process to find out about the world and to solve problems.

The steps that make up the scientific process are not necessarily in order (sequential), and may include:

Step 1: Identify a problem and develop a question. What is it you want to find out?

Step 2: Form a hypothesis. A hypothesis is your idea, answer, or prediction about what will happen and why.

Step 3: Design an activity or experiment. Do something that will help you test your idea or prediction to see if you were right.

Step 4: Observe/note changes/reactions (e.g. through measuring), and record your observations (e.g. onto a table). What were the results of your activity or experiment? Write about what happened.

Step 5: Make inferences about the observations recorded in the tables, graphs, drawings, photographs. Make some conclusions. What did you find out? Do your results support your hypothesis? What did you learn from this investigation? (DoE, 2011a: 11-12).

For the purpose of this study, these process skills have been condensed into three specific process skills. Each process skill will now be discussed in terms of its desired outcome as well as analysed for evidence of any power struggle within the test which may result in the domination of a few over others.

Process skill one claims that the learner will be taught how to access information and later, recall this information to make meaningful decisions by applying this knowledge when making decisions or carrying out a practical task (DoE, 2011a:10). Firstly, let me analyse what is meant by "accessing information".

The concept of "access" denotes that one is able to or given the opportunity to reach or approach a place or phenomena. The person is thus furnished with the needed tools or skills or knowledge to reach or achieve this phenomenon. The concept of "information" is vague as the term "information" may denote various meanings, depending on its context. For the purpose of this study, "information" will be referred to as the facts, details, data or particulars of the phenomena or context being interacted with.

Access to information is provided within a solid framework which should be used as a guideline in all Natural Sciences classrooms-historically advantaged and disadvantaged. How the first process skill may be implemented for life-long learning is apparent in the levels of interaction between learners and the knowledge taught. For this knowledge to be life-long, the learner must be able to recall the information taught as well as know how to apply it in real-life situations.

The concept of "recalling information" may be analysed as follows. The concept of "recall" refers to the act of remembering something learned or experienced previously. The learner may be taught the process skills at a Grade 7 level but these process skills continue being taught within the Grade 7 Natural Sciences classroom under the aims and guidelines set out in the CAPS document. Thus, this knowledge or information is being reiterated for the learner to make meaningful connections with the information with the aim of recalling it at a later time. This information or knowledge takes the learner from being an observer to one who interacts with unknown information in order to make these meaningful connections with the knowledge and the application of it in reality. These connections are developed through engagement with the information as well as through connecting with other like-minded individuals where information can be shared by means of the deliberative democratic approach.

For deliberation to occur amongst learners, they must be presented with an unknown. They are then required to build a conceptual framework around the given information. In doing so, the learners observe the phenomena and then compare this information with what is already known. Deliberation requires interaction between speaker and audience. What it aims to achieve is active participation between opposing parties where opposition in thoughts are acknowledged and discussed to deepen understanding about other's experiences through their own understanding of what is being said. It is where decisions are made and thoughts and suggestions for the advancement of the society are brought into discussion. People make decisions about what is best for them and their surroundings and greater environments (Waghid, 2010:31).

The second process skill listed is learning how to investigate various phenomena in the world (DoE, 2011a:11). The concept "investigate" may be analysed in science as the processes or steps followed or carried out in order to prove or disprove hypothetical problems. These steps are not sequential, as each problem has its own set of variables which must be taken under consideration as well. However, for the process to be deemed scientific (quantifiable), the process must include the following: Identifying the problem is the first step in the concept of "investigating". Investigating the problem requires learners to follow the steps listed in the NS CAPS document (DoE, 2011a:11).From this problem, a series of questions or one main question must be developed. It is here where process skill number one is implemented: the learner is required to make connections with previous knowledge learnt and implement it in an unknown situation in order to draw conclusions. These steps are: 1) Identifying the

problem and developing questions to solve this problem, 2) Form a hypothesis to prove or disprove predictions made, 3) Designing an activity or experiment to test the predictions made, 4) Making observations of the results of the activity or experiment and 5) Drawing conclusions from the results observed- did it prove or disprove the original hypothesis made? (DoE, 2011a:11-12). An example from the Grade 7 curriculum where these steps may be applied is in Term 2 where learners classify various materials into categories, specifically into acids, bases and neutrals. This is done through carrying out experiments and implementing the knowledge they have gained by hypothesising the status of various substances based on the characteristics of the specific substance (DoE, 2011a:13). Interaction amongst learners is established as learners will work from what they know and have experienced towards the unknown. In this instance, they may pool their information to create or ask meaningful questions. The purpose of these questions is to have a concept of what must be worked towards in order to answer the unknown. This question formulation is referred to as a "hypothesis" which is the purpose of step 2.

This hypothesis may be carried out and the results will then be observed and recorded by the learners. In doing so, they are taking ownership of the situation by observing the results of the decisions made to follow the scientific course of action to prove or disprove their hypothesis. From these observations, they may then infer - again by means of recalling past information- if the results of the experiment are fulfilling the prerequisites of their hypothesis or if a new course of action should be implemented to reach achieve the desired outcome. The sixth step in gathering the needed information requires the learners to draw conclusions of their observations. Learners may discuss their inferences and ascertain if they fulfil the desired outcome of the experiment.

The last step in this process skill is to ascertain if learning was achieved. Through evaluating the process which they followed in solving the problem through investigation, learners become self-aware of their strengths and weaknesses as well as acknowledging and assimilating any new skills learnt. The process skill is achieved once the learner is able to reproduce their investigative skills in other instances as well and not only within the NS classroom (DoE, 2011a:11). A method of recalling these skills and reproducing the investigation would be through recording the processes followed as well as the observations made throughout the investigative process. If the information was not known or could not be recalled by learners, the next step in the investigative process would be to do research.

Research requires the researcher to be a skilled reader and able of critical cognitive abilities. Students must engage with appropriate levels of texts to further their word bank and to apply their growing word identification skills (Pikulski & Chard, 2005: 516).

Learners should be taught a language that is age appropriate to Natural Sciences. Having a well-developed NS vocabulary is crucial to the development of comprehension. If learners cannot comprehend what they are reading or discussing, it becomes a senseless activity, as the needed cognitive connections cannot be made (Ellery, 2009:130). Cognition is needed for the learner to draw meaningful conclusions from what is being read. Critical thinking skills are then required to transfer this new knowledge and apply it to the situation at hand. Here, the learner's skills as a researcher is called upon again and to be successful at assimilating information, the learner must have a well-developed reading and by extension, writing capacity. It is with this that the third process skill as stated in the Natural Sciences CAPS documents will be analysed: developing the learner's reading and writing skills.

The third process skill to be analysed is that of developing the learner's language skills in reading and writing (DoE, 2011a:12). For the learners to be comfortable in implementing the steps required to carrying out in scientific process or to decide what the best course of action will be when faced with a hypothesis, they must be able to read fluently as well as comprehend what is being read. Researchers have found a direct link between readers' fluency capabilities whilst reading to what they have understood from the written piece (Perfetti, 2010:294). Reading fluency and comprehension is central to a learner's success at any sphere of the educational career.

Writing, as a skill, is vital as the learner's first developed skill which he/she uses to communicate thoughts with others (DoE, 2011a:12). Even though many institutions make use of digital learning and communication, writing is a vital skill which is taught during the foundation phase of the learners' education to equip them with reading and writing skills. Within the Natural Sciences lesson, the learner will be faced with numerous opportunities to read and write for information purposes. Notating observations is a vital as it forms a point of reference for learners to refer back to when drawing conclusions about their observations. Also, it teaches them various writing skills such as listing and substantiating findings. An example of the application of these skills in Grade 7 in term 3 is found under the sub heading of: Suggested activities: investigations, practical work and demonstrations (DoE, 2011a:26)

where learners list non-renewable and renewable energy sources and explain why they are regarded as non-renewable or renewable energy sources (DoE, 2011a:26).

These genres of reading materials may include instructions, reports and explanations (DoE, 2011a:12). These readings are of utmost importance in the NS classroom, as it is where learners are armed with needed information in which to subsidise their knowledge base with. The NS CAPS document lists various reading resource suggestions for teachers such as textbooks and reference materials, pictures and reading texts about non-renewable and renewable sources of energy and various food packaging with labels showing energy content of food (DoE, 2011a:26) for example when teaching Energy and Change in the third Term.

Reading allows learners to experience the writer's thoughts and viewpoints first hand and this gives the learner the opportunity to form his/her own hypothesis to prove or disprove. It thus teaches the learner how to read for clarity as well as how to make a decision or come to a consensus based on what is written and their understanding thereof. Once again, Martha Nussbaum's "capacity for Socratic self-criticism" is practiced (Nussbaum, 2006:387) where individuals are capable of making decisions on their own by means of self-analysis and not being dependent on outside consultation .

A critical discourse analysis approach will be used framed by qualitative research methodology. A qualitative research methodology furnishes the researcher with the needed tools to view and analyse the world within an interpretive and naturalistic approach (Bogan & KnoppBiklen, 2007:6; Denzin & Lincoln, 2011:3-4). Critical Discourse Analysis aims at uncovering the actor's point of view from within the social situations they occupy. Thus the behaviour of people in the situations they are placed in the social world and how we can learn from these reactions (Hitchcock & Hughes, 1989: 25).

Themes the analysis will show how the discourse used in policies relating to NS teaching could possibly engender democratic citizenship in South Africa. This data will be analysed within three distinct policy implementation periods:
- The first period of policy activity from 1990-1994 - associated with symbolic policy-making or the period of policy positioning (Jansen, 2003:2; Van Wyk, 2012:18).

- The second period from 1994-1998 will focus on framework development or the period of policy pronouncements (Jansen, 2003:2; Van Wyk, 2012:18).
- A third period of policy-making from 1999 where implementation of policies was concentrated on (Van Wyk, 2012:18).

It is vital that the researcher maintains a strict ethical code in analysing this data as the authenticity and trustworthiness of the themes found in this study may be questioned.

3.3.7 Ethics, reliability, rigour, authenticity and trustworthiness

In research ethics refers to the questions the beliefs, judgments and personal viewpoints by the researcher based on their observations. It describes the researcher's personal values and their willingness to take responsibility for their observations and the assumptions which are formulated from them. "Ideas entail values; values involve assumptions of right and wrong, good or bad" (Hitchcock &Hughes, 1989:44-56). A qualitative researcher is concerned with the moral sphere of the actors.

Here, an actor's personal perspective may become a communal point of view. The collective's viewpoint may hold sway as it may have an impact on the community as a collective. Thus, viewpoints are taken based on the obligations that the citizen has to his/her community (Hitchcock & Hughes, 1989:44- 56).

Koch (cited in McGregor & Murnane, 2010:419-427) states that the post-positivistic researcher strives for trustworthiness by making use of unbiased criteria. They endeavour to achieve credibility, transferability, dependability and conformability from the documents being analysed. The study is trustworthy if the events, influences and actions of the researcher accounting for how their perspective is sound. This is referred to as rigour. It refers to whether the study being conducted is valid and trustworthy. Rigour, in a post-positivistic research framework, specifically refers to how the study was accomplished (McGregor & Murnane, 2010:426).

Challenges faced by a researcher are reliability, trustworthiness and authenticity. Reliability refers to whether or not the research method may be replicable (Hitchcock &Hughes, 1989:107-109). This involves a new researcher carrying out the study by employing a

different method or technique from which to analyse the study. Critical Discourse Analyses is the lens used through which the information collated by means of employing the qualitative research methodology. This may present as a problem for reliability based on the virtue of this method of study as it is the reader's context which may influence their understanding of the problem. Thus, much of the results are to be accepted with an understanding of trust that the research was completed as stated. Bias is a concern. How the researcher presents the argument to inform a schooling body of the outcomes may be questionable. However, the researcher is held accountable for how thorough and valid the study is(Hitchcock &Hughes, 1989:107-109).

Trustworthiness and authenticity refers to how valid the data being analysed is. As a researcher, one must be very aware whilst analysing data for any unexpected variances in the text. One must be vigilant in checking for consistencies and plausibility (Hitchcock & Hughes, 1989:223-224).

Hitchcock and Hughes (1989:223-226) have formulated a list of guidelines which the researcher may follow to ensure trustworthiness and authenticity as far as possible. These authors stress the importance of checking the credibility of the documents before using them as well as their representativeness of these documents in reality.

The credibility of a document refers to the sincerity of the information given in it. The researchers must ask themselves: how much time has elapsed since the document was produced? Is the document a first-hand source document? What was the author of the document's interest in the events described in the document? (Hitchcock & Hughes, 1989:223-226).

These questions are posed to protect the validity of the study. For this study in particular which focuses on the implementation of policy documents, it must be taken into consideration that various policies   are promulgated and amended at various time periods. Also, policies may have corresponding documents to be used in conjunction with the base policy document- as is the case of the CAPS document which has two additional documents, namely the National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R-12; and National Protocol for Assessment Grades R-12 (DoE, 2011a:3).

The context under which the document was created is the most important question to answer when the researcher wants to confirm its credibility. Here, the author of the document's bias may impact on the researcher's study as well as skew the results achieved (Hitchcock & Hughes, 1989:224). Thus, the researcher is responsible for ensuring credibility as far as possible. Also, it is not ethical for the researcher to doctor a document so that it fulfils the research requirements or data.

Representativeness describes how well the data is being presented as well as the quality of the data presented. In document research, the availability and accessibility of data will have an impact on what is being analysed. If there is a large amount available, it may be necessary for to use a sample of the data on which to base the research. A limited amount of data may cause a research problem to fail as there is not enough information to analyse and draw themes from. Historians in document analyses posit that the lack of documents is not caused by any information being available, but due to only a limited amount of documents remaining after time. This lack of documents is the result of telecommunications being the principal method of communication, causing there to be few transcripts available for study (Hitchcock & Hughes, 1989:224-225).

It is with this understanding of the research methodology and methods to be used in this study, that in Chapter 4, "citizenship", "democracy" and "democratic citizenship" as concepts are discussed. A brief history describing ancient schools of thought as well as a modern understanding of what it means to practise citizenship and democracy will be given. A section pertaining to citizenship in a South African context is provided as well.

CHAPTER 4: ENGENDERING TEACHING OF DEMOCRATIC CITIZENSHIP THROUGH THE NS CAPS CURRICULUM

4.1 Introduction to teaching democratic citizenship

From earlier times, the young of a tribe or society were inducted into the fold by means of rituals, skills and knowledge transferred from one generation to another. These modelled behaviours were in turn practiced by the youth through role playing to apply this knowledge and become comfortable with these designated roles. Each elder was responsible for the children's education and advancement in the society. Children were trained at an early age to be useful in their society as each member held a responsibility to promote and protect their way of life. They were taught to be mindful of their actions, taught skills and knowledge of the tribe's past as their education was not for the betterment of themselves, but for the society as a whole (Mhlauli,2012:106).

This notion of teaching ensured that the child was prepared to become a contributing individual in the tribe and thus ensuring the continuation of their culture and advancement of their community. The onus was thus on the elders of the family unit or community to best impart their knowledge to the younger generations to ensure the promulgation of the society. These traditions were taught orally and it was through this mindful teaching and modelling by their elders that "children were taught respect for elders, instilled with morals and positive attitudes, and imbibed with the cultural heritage and values of their people" (Omatseye & Omatseye, 2008, p. 163 cited in Mhlauli, 2012:106).

However, colonization and forced reforms by colonists, traditional methods of learning were discarded and as eurocentric views of what was considered to be educational and what was not (Mhlauli, 2012:113) impacted on global trends. Family values and lessons have given way to the classroom situation where learners are now, initially exposed to the concepts of ubuntu. The onus now falls on the education system to capacitate learners with the needed skills and morals to fulfil the concept of what it means to be democratic citizens who respect the rights and liberties of others, are contributing members of society and are self-aware that their thoughts, actions and words may have far reaching consequences when used in a negative context. Teaching learners how to be democratic cannot happen in a theoretical sense or by means of reading about it, democracy must be enacted by persons who act in the

capacity that they wish to foster to others- that is to act like a citizen who respects the rights and liberties of all others, regardless of their race, culture or orientation. Educators teach through implementing a curriculum which supports the development of moral, social, political and intellectual learners who can take their rightful place in a democratic society (Kelley1995:108; 169-170; Schoeman, 2006:135).

This study is centred in a deliberative model of democracy as expounded in Chapter 2. The deliberative model was selected for this study because of its lack of empirical standing. Theorists have claimed that when "deliberation" occurs, the success of the exercise cannot be quantified as there are too many outside factors influence the rate or quality of the deliberation occurring. Factors such as open-mindedness, rules of discourse, open-mindedness, cannot be measured by making use of an instrument (Reich, 2007:188).

The success of deliberation is measured through observing the context where this deliberation is taking place. However, this interaction is only possible if subjects are planned to allow dialogue to occur in a manner that upholds the values of democracy and citizenship within the classroom. The NCS Grade R-12 aims to ensure that learners are taught in such as way as to give meaning to their lives by applying the knowledge, skills and values that they are taught at school (DoE, 2011a:4). This may be achieved through the guidance of experts where this knowledge is an ideal which can be attained through practice. In this context, 'experts' refer to the educator. All learners are now furnished with the same information being taught, ensuring that no child is without the needed knowledge (cognitive ability not withstanding) and the prerequisites for citizenship is fulfilled as all learners are given a platform for free speech and for the formulation of their own ideas with the guidance of the educator. These ideas may then reach a pre-determined conclusion without having learner's liberties being compromised by having them disregarded as having no value to the lesson. The NCS further aims to equip learners across all socio-economic backgrounds, regardless of intellectual and physical ability; race; gender and background with the needed skills, values and knowledge (DoE, 2011a:4). These attributes may allow them to reach a level of self-fulfilment and participate in society as a contributing citizen (DoE, 2011a:4).

As mentioned the deliberative model has been selected as it assists in exploring the central research question as well as compliments the context and site in which this study is focussed - a classroom community. In a classroom situation, deliberation is successful when learners are

communicating with each other. The rate or level of success may be measured through observing how well deliberation occurs and what may be done to improve or enhance the quality of this deliberation (Reich, 2007:188). It with this understanding that a brief discussion will ensue about what deliberative democracy aims to achieve in a classroom where a sense of community is practised.

4.2 Deliberative democracy aligned to NS, CAPS implementation in the classroom

Firstly, deliberation aims to teach learners how to interact in a social situation such as the classroom being an ideal site for this interaction to occur. Deliberation teaches learners not only to speak with understanding but to listen with understanding as well. It aims at teaching the learner how to listen to what is being said and assimilates the given message without interrupting the speaker and challenging the speaker's views before understanding what is being said. This will require the learner to practice self-control and learn how to respect the views of others.

However, it is a skill which will teach the learner how to respond to and reject arguments without offending and thus disrespecting the speaker as well as others partaking in the conversation (Reich, 2007:189). Secondly, it is believed by theorists that values and virtues based on democratic orientations such as tolerance, respect for others, critical thinking, and appreciation of the diverse cultures, religions and practices of others may be taught to learners through implementing deliberation in lessons. NS is concerned with the protection of the environment and the advancement of methods to enhance everyday living; learners are being prepared for active participation in a democratic society where these matters are of concern to all citizens. Through deliberation with each other and the educator, learners are taught to value human rights and promote the importance of acting responsibly towards the environment in the NS classroom (DoE, 2011a:9). This knowledge is carried with them throughout the schooling career and later, the workplace.

Even though there are many positive aspects to including deliberation within lessons, there are negative connotations as well. A negative aspect being the amount of time that the deliberation may take before the lesson may successfully be concluded (Reich, 2007:189). Thirdly, deliberation may enhance the learner's cognitive abilities (Reich, 2007:189). For

deliberation to occur, the learner must have a knowledge base from which draw conclusions from and deliberate with understanding. This prior knowledge is based on the progressive development of knowledge gained during the intermediate phase years and will continue to progressively develop over the time period spent in the senior phase (DoE, 2011a:9). However, because deliberation cannot be measured, nor can it be said with conviction where the route these deliberations may take the learning process, the responsibility lies with the learner to critically think about what is being said and then make decisions based on the then current status of the deliberation. An example of the application of this critical thinking skills and the possible repercussions of being insensitive can be seen in the Grade 7 NS curriculum in Term 1, where the sexual orientation of people as well as various views on contraception are discussed (DoE, 2011a:20), thus learners must be taught to speak with sensitivity. Once these factors have been identified, the learner may then proceed to interact in the conversation. NS aims at creating a platform for learners to continually challenge their own ideas about nature and the impact that society has on the environment. It encourages learners to interact and share ideas and solutions with others (DoE: 2011a: 10). Deliberation in the classroom thus allows the learner a safe space in which to interact by making use of critical thinking skills and applying reason to the situation before interacting.

The fourth and last aim of deliberation in a classroom community is to foster the generating of new knowledge amongst learners (Reich, 2007:189). This creation of new knowledge empowers learners to take their education to new heights. Here, they are in control of the direction their learning will take them. This progress is evident at the end of each two week cycle. For a section in the learning Strand to be concluded by the educator, the NS CAPS document lists specific questions as a check list for learners through the guidance of the educator, to ascertain if they have fulfilled the requirements of the lessons for that cycle (DoE, 2011a:20). This last aim is enhanced by three prior aims as it is the culmination of all three. Learners listen for new information and react on it once they have made the connections between prior knowledge and the new information. With this new information they are now empowered to contribute towards the conversation. The application of these skills is evident in the CAPS NS document in the Term planning section. The Investigations, Practical work and Demonstration column gives the teacher guidance on leading learners to specific avenues for discussion, examples of possible discussion cues can be seen in the Grade 7 Term 1 lesson plan where learners are encouraged to discuss and writing about the

changes experienced during puberty, discuss and writing about responsible sexual behaviour and discuss myths about menstruation and sex (DoE, 2011a:20).

Thus, deliberation aims at exposing learners to new information which was discovered-with guidance of their educator- through interaction with their peers by discussing their views and understanding about the topic, myths about puberty as mentioned above (DoE, 2011a:20) being an example of a topic to be discussed. Waghid and Davids, (2013: 12-13) reiterate the virtues of deliberation when they conclude that when citizens act democratically, they announce their position and in doing so, they actualise their equality in exercising their right to think, speak and act freely without the risk of condemnation of their peers. It is in this type of classroom environment that a democratic citizen may be fostered. The focus of this study will now be centred on how Natural Sciences in the CAPS policy document could engender democratic citizenship within the democratic classroom.

4.3 Applying Democratic Citizenship in the Natural Sciences CAPS curriculum at Grade 7 level

The purpose of the National Curriculum Statement of which the Curriculum Assessment Policy document is a supporting document, is to ensure that learners are taught scientific and cognitive concepts in stages.

The purpose of this is to ensure that they have a solid foundation and that through their phase; this foundation is built on by means of adding more scaffolding concepts to what they have been taught. This advancement does not necessarily mean more theoretical knowledge but also the progression of concepts from basic to more advanced, whilst staying within the framework of the policy requirements for Grade 7.

The CAPS Natural Sciences document is specific in what its aims are for teaching and learning to take place in the Grade 7 NS classroom. These aims coupled with the practical process skills, engender democratic citizenship in the classroom. But, it is the role of educators as facilitators to direct their teaching to the NS CAPS document to ensure that they are following the guidelines to ensure the success of the educational process. Waghid (2003:4) posits that a policy document is a guideline where prescribed actions are formulated and are to be implemented according to the framework in the education system to bring about

change. The onus is on the educator to familiarise themselves with the information and then guide learners to deliberate. The introduction of the Curriculum and Assessment Policy Statements (CAPS) was not foisted on educators without instruction. Educators in all phases have been trained during times specified by their Educator's Unions or the Department of Education. Support and resources such as workshops, posters and workbooks have been distributed to educators as well to further their understanding of the new curriculum (DoE, 2013:19). The onus is on educators to ensure that they are fully versed in the application of the CAPS document throughout the curriculum. Teachers have the freedom to expand concepts and to design and organise learning experiences according to their own local circumstances (DoE, 2011a: 16). However, a prerequisite of this freedom is that the NS lessons must reflect the indigenous and cultural groups represented in South Africa and not deviate from the NS CAPS curriculum for the specific grade (DoE, 2011a: 16). Thus, the educators' level of personal efficacy may affect their willingness to adapt to this change and apply these changes within their lessons.

If an educator has a high level of personal efficacy, their positive attitudes will filter through to their learners in their methods of teaching, classroom management and social relationships with their peers. Educators who are willing to learn from others experience and accommodate their learners' diverse educational needs will create and foster classroom environments which allow students to grow and experience learning in a positive climate. Educators with a low sense of personal efficacy will be filled with self-doubt in their own capabilities as an educator and therefore will not have the social and emotional tools required to promote their students growth (Bandura, 2005:10-12). The educator plays a vital role in fostering engendering deliberative practises as aspired by the Constitution and the Bill of Rights.

Instruction in the Natural Sciences class is now varied in that learners are taught deliberative skills which may be transferred to other subjects. The NCS Grade R-12 specifies that learning must occur in such a manner where learners apply their knowledge to solving problems. It states that problems do not occur in isolation, thus learner's should apply their problem solving skills across all facets of education as the world is an interrelated system (DoE, 2011a:5). Learning styles and teaching methods are now learner-centred and does not involve learners copiously taking down notes whilst the dominant educator speaks. This consolidates the 'power struggle' as learning and educating are more interactive and allows the educator to expand teaching method, thus aligning to co-operative methods and pedagogical aims.

Deliberation requires less resources as it is the learners who are providing the teaching and learning material which makes deliberation an inexpensive teaching method and thus accessible to all learning institutions- historically advantaged or disadvantaged (Reich, 2007:190-191). The NS CAPS document provides the educator with lists of possible resources which will enhance the learning experience. The document further states that these resources are suggested and not compulsory (DoE, 2011a:12). The resource lists have accompanying suggested activities as well. These activities require learners to discuss what they can identify, describe and observe as the suggested activity involving the biosphere in Term 1 of the NS CAPS document for Grade 7 states, thus learning takes place through interacting with each other through deliberating on what was identified, observed and described by other learners and not only dependent on expensive resources (DoE, 2011a: 12, 17).

Although deliberation holds many positive features, it is still a relatively new method of education as Reich (2007:192-196) posits. Research mentions three specific themes which arise from using deliberation as a method for informed educative practices. The first theme is that communication is very rarely equal amongst conservationists (Reich, 2007:192-193). As mentioned in Chapter 7, power struggles occur when interaction between people is not equal, the method of discourse becomes a site for educator or peer power struggles to occur. The manner in which deliberation occurs could possibly affect the outcome of the discussion. How often learners speak or is called upon to answer in a class discussion may dissuade others from partaking in the discussion. This may influence how learners view each other or the lack of contribution towards the topic by others. When learners feel that their contribution may not be valid or salient enough to contribute, they may not want to respond. This type of attitude causes conflict and in doing so becomes a site for a power struggle between peers.

The second theme is that of focussing on the discussion held by learners (Reich, 2007:193-194). Learners should not be deliberating about anything other than the topic. This may be held as being undemocratic by some discourse theorists as each person should be free to speak about what they choose based on the topic of discussion in the NS CAPS document, for example discussing about careers in the field of electricity power generation (coal, nuclear, wind, water) including engineers, scientists (research), artisans, technicians (DoE, 2011a:30).

However, in a teaching and learning context, a guided discussion with an aim in mind should be kept on track. This ensures that the subject aim is fulfilled and that the deliberation taking place is of cognitive benefit to the learners. The response of learners partaking in the deliberation must also be noted for future discussion should the discussion go awry due to learners disagreeing with the main speaker or first speaker to an extent that the plot of the deliberation may be lost. Here, it is vital that the rules of deliberation or democracy must be maintained. Democratic principles must be upheld and learners should be reminded of this while deliberating. The Constitution of South Africa by means of the Bill of Rights (1996) in section 16 describes the Freedom of expression that each citizen of the country has. These include: (a Freedom to receive or impart information or ideas, (b Freedom of artistic creativity; and (c Academic freedom and freedom of scientific research (RSA, 1996:1249).

The third theme discussed by Reich (2007:193-196) is that of having external factors which may influence deliberation. These factors may include the physical setting of the discussion, the social structure of the group deliberating or the class hierarchy and the effect that the cultural beliefs of learners may have on the discussion at hand. The physical setting where deliberation occurs may include the site or the context where the learning institution is based, for example the classroom. "Access to education" was mentioned where the disparities in historically advantaged and disadvantaged school's results achieved was discussed. Setting includes the classroom itself, the library or any other educational context in the school environment. The number of learners partaking in the deliberation may affect the success of the discussion as well this needs to be well organised where each learner has the right to contribute to the group. The opportunity to interact decreases as the number of learners in the group increases. Too much information may cause distress amongst learners as they will have to engage with data on a larger scale. An example of this in the Grade 7 NS CAPS document can be found in Term 2 where the height of learner's family members must be analysed for trends (DoE, 2011a: 21). This will disadvantage learners and viable information may be passed over in such a setting. The social structure of the group as well as the cultural beliefs of learners in the group influences the quality of deliberation more than that of the setting if not controlled properly. The social standing of or each other in the group may influence what learners say in addition the presence of the teacher could further impact on the deliberations if existing power relationships exist. Here, a dominant personality could enhance or hinder the discussion.

Cultural beliefs may differ in a particular group a well and this too will hinder the quality of the discussion. Learners may have various belief systems which are in conflict with what is being discussed. This allows the discussion to be stunted as these learners may not have prior knowledge to connect with. In South Africa, an Inclusive education exists where diversity is embraced and espoused in our democracy. Thus, the belief systems of diverse groups are protected under Section 9 in the Bill of Rights in the Constitution of South Africa where everyone is equal under the law and no person may be discriminated against due to religious or cultural beliefs (RSA, 1996:1247). The Natural Sciences CAPS document allows for deliberation to take place in a classroom context where learners are taught how to interact with each other in a sensitive manner where each person's rights and liberties are respected and valued as democratic rights as espoused in the South African Constitution, the Bill of Rights and the Values Manifesto.

However, caution must also be practised when using education to shape the ideals of citizenship in a democratic society by policy makers. In the past, it was this type of education by totalitarian societies where the implementations of democratic practices were attempted and were found to be objectionable. An example of such a society is the Soviet Union where education was aimed at shaping student's identities to what was perceived as being "good". This education aimed at creating an individual who formed part of the collective where individuality and free-thought were subordinate to Marxist-Leninist theories. However, in South Africa these practices are in direct contrast to the educational ideals set by deliberative democracy principles which seek interaction between individuals where points of interest are disputed and discussed for understanding to occur between parties. Freedom of speech and individuality is called for in a deliberative model. These schools in conjunction with youth organisations and the media all colluded to create the ideal communist where collectivism and atheism formed the qualities of the person (McLaughlin & Juceviciene, 1997:24).

It is with this understanding of the application of the Natural Sciences CAPS document that conclusions and recommendations will be made in Chapter 5.

CHAPTER 5: RECOMMENDATIONS, CONCLUSIONS AND LIMITATIONS

5.1 Possibilities for engendering democratic citizenship education in the NS CAPS document

The purpose of this study is to ascertain if the Natural Sciences Curriculum Assessment Policy document could possibly engender democratic citizenship in the Natural Sciences classroom through the practical implementation of the three process skills reviewed in the document. It set out to ascertain if deliberative democratic skills were evident in the NS CAPS document.

Because Grade 7 is the first year of the senior phase, learners are introduced to new scientific concepts. These concepts are referred to as knowledge strands (DoE, 2011a:9). Each knowledge strand progressively develops across the three years of the senior phase. During these three years, the framework for more specific science disciplines is developed.

Thus, these specific disciplines should prepare learners to participate in society at the completion of their schooling career. This participation may be in the form of further studies or applying their knowledge in day-to-day living. Learning science also builds the learner's awareness of their natural environment and the affects that modern living is inflicting on nature. This knowledge promotes their sense of civic duty and responsibility towards caring for the natural environment, as we are dependent on it to survive (DoE, 2011a:9).

The fostering of this sense of responsibility towards the conservation of the natural environment is one of the aims of the 'responsibilities' stated in the Bill of Rights (South Africa, 1996:24). Here, the correlation between the Bill of Rights of South Africa and the National Curriculum Statement is highlighted. South Africa is a country where the rights and responsibilities of its citizens are at the forefront of the development of the country but these citizens must take responsibility and ownership of the needs and demands of the natural environment they live in. This is to ensure that future generations are left with a healthy environment. Each individual citizen is thus ethically responsible for the protection of the environment and all its components. The difference between other curricula and CAPS is that

CAPS provides the educator with the process skills which are needed for this attainment to be satisfied.

The three aims specific to this study in the CAPS document for Natural Sciences provide the educator with aims to which the learners may aspire to. These aims are incorporated into lessons, as it is here where learners engage with the scientific theory being taught and discuss how and where it has relevance in a real world context. These aims are to be satisfied to enable the learner to reach a level of understanding. This understanding can be attained by means of further study, carrying out experiments and discussion (DoE, 2011a:10). These aims and process skills mentioned above are geared towards providing learners with the opportunity to develop a range of process skills that may be used in everyday life, in the community and in the workplace (DoE, 2011a:10).

They are fundamental to the fostering of democracy and citizenship. Specific aim 1, "doing science", refers to the practical aspects of investigating phenomena, creating and carrying out experiments to prove or disprove hypotheses and then relate the results of this information to others. Attitudes and values underpin this ability (DoE, 2011a:10) as it is vital that learners are respectful of the environment as they engage with these practical skills.

Specific aim 2, 'knowing the subject content and making connections', refers to the learner being capable of making connections between the theory being taught and their context. Educators provide the framework of knowledge for learners to engage with and relate their everyday lives to. Here too connections between theory and real world instances may be made through engaging with other learners and learning from their experiences as well (DoE, 2011a:10).

Specific aim 3 refers to the learner 'understanding the uses of science' in the past and at present. Learners must be made aware of the ingenious knowledge that their ancestors had gained and imparted to their offspring. This knowledge is vital as it teaches learners that the indigenous peoples had survived for many years and whether or not their inventions would be practical to use today. Learning about the contributions made to the scientific community will teach learners how to appreciate these ancient people's knowledge and make connections between NS and other content subjects (DoE, 2011a:10).

In comparison to the previously employed National Curriculum, the NCS document, a strong proposer of learner-centred, outcomes based instruction (Booyse, Dempster, Cilliers, Johnson, Majozi, Pillay, Wiese, Grussendorff, Isaacs, Stephen, van der Hoven &Zuma, 2014:13), where the learner achieved a series of activities which were evaluated for success in the acquisition of a skill, CAPS is "educator-centred and content-driven" (Booyse, et al, 2014:13). Thus, where the NCS actively implemented values and attitudes as part of the learner outcomes to be achieved at the end of a lesson or period of time where learners were made aware of the need to be ethically aware and sensitive towards other's cultural and religious practices and beliefs, the CAPS document refers to the democratic issues more subtly (Booyse, et al, 2014:13). These democratic values and attitudes must be implemented by the educator whereby the learner-centred approach underlies all teaching in lessons by way of the specific aims and process skills.

Because the CAPS document is a highly structured curriculum to ensure that all learners in South Africa are equally furnished with the same curriculum and knowledge educators have the ability in which to be creative in their teaching yet adhere to the guidelines set within the document. Thus, educators work within a confined set of guidelines which map the sequence that each lesson will take (Booyse, et al, and 2014:16). This requires the educator to be familiar with democratic principles and to express them in their lessons. The rationale behind this stringent time - and knowledge guidelines is to ensure that progression in subject matter and knowledge occurs (Booyse, et al, 2014:16). Thus, the learner is taught the basic concepts and systematically builds on this basic knowledge as time passes and lessons become advanced as they are built upon the progression and scaffolding of content and knowledge gained through the intermediate phase. This knowledge, skills and values create a firm base from which the senior phase NS CAPS curriculum by way of the specific aims and process skills may further foster democratic practises within lessons.

Deliberative democratic skills are therefore evident in the NS CAPS document. Learners are taught how to practise democratic skills in the NS classroom through deliberating with each other whilst keeping in mind the prerequisites of what it means to be a democratic citizen as set out in the Bill of Rights and the Constitution of South Africa (RSA, 1996)

5.2 Language used in the NS CAPS document

In complying with the tenets of critical discourse analysis, the three process skills found in the Natural Sciences CAPS document have been analysed for evidence of any power struggles within the language used in the document. The impact of these 'power' relations in the NS CAPS document was reviewed. It is this "power" which allows one party to exert its dominance over another party or power struggles which could possibly result in an unequal distribution of social power amongst learners due to the implementation of these three process skills. It was found that the process skills are not possible sights of a power struggle as they are clear in the scope of what can be achieved through their implementation.

Process skill number one, access and recalling of information may be seen as a site of struggle as it ascertains that there are still instances of unequal educative practices occurring in historically advantaged and disadvantaged schools. However, the NS CAPS document counteracts these negative factors by having a framework of aims in place which explains what must be taught in the Natural Sciences class. A power struggle does not exist within the application of the document, but rather as a result of unequal access to schooling in general.

The second and third process skills are quite transparent with their aims of teaching learners' investigative skills as well as methods of recording and researching information critically. The rationale behind the implementation of these process skills in the Grade 7 Natural Sciences classroom may enhance the learning experience of learners and thus may engender democratic citizenship amongst learners by means of the active application of these process skills during lessons. This is wholly possible should the framework created by the three specific aims be taken into account as well. This action is the responsibility of the educator. It is the educator who is in control of manipulating the policy document towards implementing teaching methods in the classroom to enable deliberation of occurring (DoE, 2011a:16). More importantly, the educator needs to foster a democratic environment where all citizen's (learner's) rights and liberties are respected and could be experienced through interactive clues for deliberation to occur as well as for the development of learning content with what is being deliberated on.

The application of the process skills as suggested in the document under the Term planner section is a prime site for the educator to find topics for guided discussions. The various

Knowledge Strands have specified skills that must be acquired for the knowledge to be gained.

Thus, the educator has a pre-planned lesson plan at their disposal where, through their guidance and the application of modelling, should ensure that the topics discussed are not sites of power struggles as the content and outcomes is clearly stated.

5.3 Limitations

i.   The application of the CAPS document within the Senior Phase is still in its early stages of practise. Thus educators have a limited amount of published materials to refer to should they require more points of reference in guiding their teaching practises. However, the NS CAPS document is transparent in its requirements for teaching and learning to occur.

ii. The CAPS document is specific with regard to lesson guidance (Booyse, et al, 2014:15). The CAPS document is explicit in its requirements for time allocation across all subjects. It does not allow educators to be flexible in their pacing, thus putting time constraints on lessons taught. This lack of flexibility may be a disservice to learners who cannot cope with the pace at which lessons are being taught (Booyse, et al, 2014:15).

iii. Learners are given little scope to learn democratic citizenship by way of educator modelling, if the educator is not allowed to deviate from the set teaching guidelines and pace time as stated in the CAPS document. However, the methods used by the educator are not prescriptive in the document.

iv. Natural Sciences as a subject requires learners to carry out experiments and engage physically with phenomena studied (Booyse, et al, 2014: 20). Because some schools are ill equipped, the learners are unable to reach their full potential.

v.   The pacing of the CAPS document content may impede on NS learning. A set time-frame is allocated to sections within the Term plan of the CAPS document. As the document has been created with an ideal learner- and educator-based community in mind, very little explanation is given towards learners who cannot maintain this learning pace. Thus learners experiencing barriers are disregarded in terms of satisfying the pace requirements. Inclusivity is not addressed.

vi. Learners are not given a platform from which to freely engage in discourse as is stated by the process skills found in the CAPS document. For learners to deliberate with each other, additional time must be allocated to the 3 hours per week time frame as stated in the NS CAPS document (DoE, 2011a: 7) towards having these discussions. However, the pacing of the lessons as stated by the CAPS document does not allow for this deviation provided that the educator has an understanding of using innovative methods such as co-operative learning skills to engage learners in discussion.

5.4 Recommendations for further study

i. More resources should be dedicated towards research in the NS CAPS document field of study. This being a new curriculum **it** made accessing viable information a challenge, thus limiting this particular study to a theoretical undertaking as research in the area of study is severely limited.

ii. Educators should receive more training through workshops in developing lessons around which deliberation can occur.

iii. The National Department of Basic Education should provide educators with opportunities to develop their own intellectual capacities by means of further study.

iv. Studies should investigate how a more deliberative mode of teaching and learning could be implemented for the curriculum to reach its goal of developing critical citizens for a democracy.

v. The study could have benefitted if there was an inclusion of the voices of educators and learners through questionnaires and focus groups.

ANNEXURE

Annexure A: The curriculum assessment policy statement: natural sciences senior phase

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