

## **The complexities of change: A black teachers' struggle to implement a new curriculum in Physical Science in South Africa**

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### **Abstract**

This article is a phenomenological narration of a black teacher's struggle to implement a new curriculum in Cape Town, South Africa. Moreover it is a representation of his lived experiences in the Physical Science classroom and how he, in his inner consciousness, negotiates meaning as he engages with the curriculum on a daily basis. Furthermore this article reflects how a teacher's life is directed or controlled by external powers [or forces] over which he has little control when it comes to the implementation phase. A teacher is constantly directed by some expert whether it is some higher authority (subject advisors or curriculum policy document) on *how to implement a curriculum* or *how to do his work*. Humans, in general, for the most part have structures that have meaning which appear as systems or complex static configurations that they should subject themselves to. Other more profound structures, sometimes more superficial, are created to construct a tradition to socially engineer them as if there is only one way of doing things. This article unveils a teacher's consciousness (his perceptions, feelings, attitude and challenges) towards a new curriculum using a phenomenological-methodological framework. A one-on-one semi-structured interview that was approximately one hour and thirty minutes long was used to gather the data. The study draws inspiration from the critical race theory and phenomenologists, such as, Edmund Husserl, Martin Heidegger, Jean-Paul Sartre and many other continental philosophical scholars. The findings revealed that the complexities of change are deeply rooted in an individual's past experiences. Furthermore the participant's identity as a prospective Physical Science teacher was already partially established during his years as a learner and pre-service teacher.

### **Introduction**

The focus of this article is on a black Physical Science teacher's 'consciousness' whilst implementing the National Curriculum Statement (hereafter NCS). With consciousness the paper refers to how the teacher (named Sipho) feels, and what he thinks about what he is doing when implementing the NCS. Sartre (1956) is of the opinion that an individual's personality is directly related to his/her consciousness. The personality constitutes the psychic qualities, that is, the emotions that flow from the consciousness of an individual. In essence when delving into an individual's consciousness, by researching his/her experiences, one can provide insight into his/her feelings, perceptions and convictions. In the teaching profession, this might unveil a more accurate understanding of what it means

to be teacher or in this article a Physical Science teacher. One can then also report on a teacher's pedagogical experiences more accurately and how it is directed towards the curriculum (NCS). Concomitantly, one can also explain the mode and quality of the curriculum delivery process.

At the time of the study, the NCS document was the only curriculum document with legal status in South Africa. It has specific expectations for Physical Science teachers, with regards to their interpretation, delivery and understanding of the subject content, learners, instruction, the learning environment and professionalism. The fact that curriculum planners and policy makers in South Africa are seldom engaged with teachers at the classroom interface may lead to multiple interpretations and understanding of the NCS.

Constandi (2000) is of the opinion that most of the time teachers teach the way they were taught. In so doing, their pedagogies do not reflect the enacted curriculum due to formidable psychological challenges to overcome issues, such as, a lack of sustained support or sufficient and synthetic content knowledge. This makes it very difficult for teachers to focus on the most important aspects, namely, to develop a learners understanding of the processes of science as well as the habit of the mind. Cohen (1990) supports the view of Constandi and argues that this happens because their old ideas, habits, beliefs and practices are still alive inside their consciousness. The background of the study can be viewed from two points of reference, namely, the drawbacks of the apartheid curriculum and the shift to the NCS for Further Education and Training (FET).

### **Drawbacks of the apartheid curriculum**

Researchers seldom examine the silent voices of black teachers with respect to how they feel, and what they think about their experiences when confronted with the implementation of a new curriculum. According to Naidoo and Lewin (1998) the majority of black teachers in South Africa teach in township schools under difficult conditions, such as, poor infrastructure, scarce resources, and a lack of facilities (for example, libraries and internet). In addition, the majority of their learners come from communities infamous for hostility, crime and single parent families often illiterate and unemployed. In general these schools (based on the grade 12 examinations) is characterised by low achievement rates. The main reason for these low achievement rates is poorly qualified teachers with a weak content knowledge base (Naidoo and Lewin, 1998). It is possible that the poorly trained teachers, resulting in the low achievement rates of learners could have its origin in apartheid education.

During apartheid, the aim of education was not only to achieve social separation between the different racial groups but its social philosophy was legitimizing the arena for white supremacy and the complex system of racial and cultural ordering that evolved around it (Soudien and Baxen, 1997). Both the implicit and explicit curricula were configured to socialise blacks to accept white superiority (Kallaway, 2011). According to Soudien and Baxen (1997) this provided the ideological cornerstone on which the apartheid education

and subsequently the curriculum was built. The common notion of apartheid education articulated by Verwoerd in 1953 was that education must train and teach people in accordance with their opportunities in life based on the spheres in which they live (Nkomo, 1990). Mumford (cited by Kallaway, 2011, p. 20) reiterates this when he writes: The white man desired native education in order to train human tools for his economic and administrative machine and to make more efficient servants of the natives, whereas the natives desire the same education in order that they might attain an equality with and even challenge the white man in his own sphere

Ogunniyi (1986; 1996) and Jansen (1999) postulate, that the science curriculum was characterized by a uniform and predictable curriculum environment under apartheid. Inquiry science and critical thinking as promoted in the NCS document was not common in schools and the majority of high school graduates left school without even one experience with real science. This was because the content was prescriptive, authoritarian, sexist, and context blind. Furthermore, this curriculum was introduced to schools with vastly different resource contexts. Most teachers today, who teach Physical Science, received their schooling and university training under similar conditions under the apartheid curriculum. It is this legacy (pre-1994) that the new National Department of Education (currently called Department of Basic Education and Training) in South Africa was forced to confront. The challenge was to facilitate a change from a previously fragmented, inequitable and racially segregated oppressive system into one that aimed to satisfy equity, equality and redress. In this context teachers had to contend with the birth of a new education system that was based on equality of opportunity, desegregation, multiculturalism, redress, and so forth. In the next section I will elaborate on this shift to reform the South African education system.

### **The shift to the FET NCS**

The year 1990 was a very significant moment in South Africa's history. Competing political movements and political actors vehemently began to stake their curriculum positions in anticipation of what now seemed inevitable – the emergence of South Africa's first democratic state after the national and non-racial elections in 1994. What emerged from the deliberations was a White Paper on Education and Training (RSA, 1995) which outlined the direction of education and training in South Africa. Based on the guidelines of this document an outcomes-based National Qualifications Framework (NQF) and an outcomes-based curriculum framework, namely, Curriculum 2005 (C2005) was introduced. See Jansen (1999) for a historical explanation of how outcomes-based education (hereafter OBE) emerged in South Africa. C2005, depicting the intended year of its full General Education and Training (GET) implementation, was underpinned by a philosophy that is outcomes-based (Jansen, 1998). According to Jansen (1999) the emphasis in such a curriculum is more on outcomes, learner-centeredness, and activity learning. In this curriculum the role of the

teacher changes to that of a facilitator. Emphasis is placed on meaningful learning (See DOE Policy Document, 2003, 2006). The NCS aims to produce a learner that thinks logically, analytically, holistically, and literally (DOE Policy document, 2006, 2008). Teachers on the other hand must be designers of learning programmes and materials, researchers and subject specialists (See DOE Policy document, 2003).

Sipho and all other Physical Science teachers are expected to fulfil the aspirations of the NCS. For example, when teaching Boyle's Law his learners must not only collect data to verify textbook information like in the old curriculum, but he must develop the learners' insight into the objectives and rationale behind these experiments by explaining to them what led Boyle to arrive at these laws. [Here teachers might need to be knowledgeable on the work of Torricelli and his experimental evidence for atmospheric pressure and how he designed the barometer from which Boyle derived his theories]. It is expected of him to demonstrate an understanding of Boyle's Law to his learners by allowing them to designing their own experiment and collect similar data that confirm the inverse proportionality relationship between volume and pressure. A learner is then expected to link Boyle's law to real life applications, such as understanding the tyre industry where tyres with stronger casings reduce accidents on our roads. In addition he must promote higher order cognitive skills amongst his learners where they should know that an increase in temperature results in an increase in pressure, therefore, a stronger tyre casing would minimise accidents on our roads caused by tyre bursts. These aspirations of the NCS not only require a teacher to use innovative teaching strategies but he/she must also expand their knowledge and perceptions about how they think learners learn. The question this article asks is: how does a Physical Science teacher experience the implementation of the curriculum. A sub-question is what goes on in his mind as he implements the NCS. In the following section the paper discusses the epistemic and ontological disposition of the study in order to understand his lived world.

### **Critical race theory**

Any lived world of an individual according to Sartre (1956) forms the flux of his/her consciousness. He argues it is purely a synthesis of the interiority. Interiority can only be lived and not contemplated. Therefore to understand Sipho's psychic qualities better I find it necessary to provide a short background of the context within which Sipho works. Sipho teaches in a school situated in an informal settlement, in Kraaifontein a district in Cape Town. For most part, the community in which the school is situated is housed in self constructed shelters in conditions of informal land tenure - a dense proliferation of small shelters constructed from diverse materials (as shown in figure 1 below). These shacks are built almost on top of each other and might lead to severe health and social problems. It is the learners that come from this community to whom Sipho teaches Physical Science under the guidance of the NCS. The establishment of informal settlements is a direct result of the Group Areas Act of 1966, promulgated during the apartheid regime.



*Figure 1: A picture of the community in which Sipho's school is situated*



*Figure 2: A picture of the school at which Sipho teaches*

Critical race theory is a framework used to theorize and examine such communities and the ways in which race and racism influence the structures, processes and discourses in such areas and also its subsequent impact on the educational context (Berry, 2005; Solorzano & Yosso, 2001). Moreover, critical race theory also provides the dais to researchers to understand issues relating to education such as curriculum, pedagogy and assessment. It emphasises the magnitude to which black learners are delimited to be equal participants in

the educational discourses. When the National Party came to power in 1948, numerous new educational policies were legislated, that disadvantaged black learners. As a result of these laws the educational landscape was divided into four main educational sectors. Each sector was designed for a specific racial group (for full detail See Naidoo and Lewin, 1998). As a result the enrolment or participation of African learners in Physical Science at school was kept at a minimum. Critical race theory recognises the latter and views it as critical to understand the lived experiences of teachers (such as Siphon) and their learners. One way of gaining insight and understanding into the lived world of teachers is through the lens of phenomenology (Groenewald, 2004; Taylor, 2000).

### **Phenomenologists as workers of experience**

It is well established in the literature that lived experience is best captured using a phenomenological framework. The phenomenological school in educational research is divided into two groups: those whose work is grounded in reference to Husserl and those who reference to Heidegger. Both groups of scholars concentrate their research activities on the idea of lived experience. Although both groups are located within the phenomenological tradition of researching lived experience, the differences between them are clearly marked. Husserl's (1970) pursuit of truth about humans focuses on the theoretical and philosophical aspects of their experience with the emphasis on 'bracketing' and 'essences' (Palay, 1998, p. 817). Husserl (1970) argues that lived experience is a pure science that is absolute and unique. On the other hand Heidegger focuses more on the ontological and contextualization of experience (Vandermause & Fleming, 2011, p. 368). Both traditions 'use lived experience' to elucidate and validate the manner in which people experience particular phenomena through observation and interaction that leads them to indubitable meanings of truth about individuals. These truths or factual necessities are subjective, floatable and precarious

Husserl (1970) advocates, that experience is the legitimizing source of cognition. Similarly, Merleau-Ponty (cited in Addyman, 2009) maintains that experience is the most immediate source and the last measuring stick of all experiences. Both scholars (Husserl and Merleau-Ponty) agree that lived experiences can be described as a reasonable measure of truth. The question is: what makes research on lived experiences different from other types (quantitative or qualitative) of studies? Firstly, lived experience is concerned with those areas of human existence that provide insight into the silent voices of consciousness, purposiveness and in so doing give meaning to their lived world. Furthermore, lived experience allows us to understand the everyday lives of teachers more carefully and attentively without any preconceived notions and ideas. This requires us to be open (perceptive) to our own experiences and to the experiences of others, thus one puts aside any dogmatic arguments and opinions we might have about others. In the words of Kierkegaard (cited by Carson, 1992) lived experience is a way of remembering forward. In this sense the implementation of the NCS becomes not a description of how the teacher

attempts to implement the NCS, but how the process of implementation unfolds in his practice as a teacher. Brown (1992:49) sums up the latter thought as follows:

We want to understand man (sic) from his world, that is, from the meaningful ground structure of that totality of situations, events, cultural values, to which he orients himself, about which he has consciousness, and to which his actions, thoughts and feelings are related ...

The above citation expresses the main aim of this study. For this reason, I sampled only one teacher which allows me to delve very deep into his inner consciousness with the aim of producing rich descriptive data to capture his thoughts. In the next section, attention is sifted to the methodological orientations of the study.

### **Methodology**

This study is situated within a phenomenological methodological framework. A phenomenological methodology is specific because it illuminates the teacher's contextualized experiences. The ontological and epistemological aspects derived from the data provide the theoretical basis for the essences of his consciousness. The essential interest in his consciousness is to generate new meaning and understanding (revealed through his stories), extending knowledge and raising new questions about a Physical Science teacher's experiences, both complex and familiar. Husserl (1970) stressed the importance of discovering the truth as derived at by understanding the human lived experience, exploring it systematically in the form of a rigorous inquiry or research. In this regard Van Manen (1984, p.38) writes:

As we research the possible meaning structures of our lived experiences, we come to a fuller grasp of what it means to be in the world as a man, a woman, a child, taking into account the socio-cultural and the historical traditions which have given meaning to our ways of being in the world.

This paper used purposive sampling to construct the data (for more detail on purposive sampling, See Dattalo, 2010). An array of factors was used to select the research participant, namely, age, race, region, and experience. As an ex-Physical Science teacher who taught in historically disadvantaged schools with poor resources, large classes, and poor support structures, I wanted to know how other Physical Science teachers experience the teaching of the subject under similar conditions during the last 5 years.

In phenomenology interviews and field notes are regarded as more trustworthy and reliable forms of data construction. Due to the heavy workloads and administrative responsibilities of teachers, interviews are less time consuming as opposed to descriptive essays which is an alternative form of data construction. For this reason I conducted a in-depth face to face semi-structured interview that produced more than 30 pages of data.

### **Conducting the interview**

When conducting a phenomenological interview Whitman (cited in Finlay, 2006, p.1) points out that no one knows how a wounded person feels, unless you yourself become the wounded person. In other words, Whitman emphasises the importance of becoming immersed in the world of the interviewee when conducting a phenomenological interview. Similarly, Heidegger asserts that 'listening to ... is Dasein's existential way of being-open as being-with for others' (Finlay, 2006, p.2). Both Whitman and Heidegger's empathy for the interviewee guided the interview process.

In this study the interview questions were all framed around Siphos experiences with the implementation of the NCS. The focus of the interview was on this question until it was exhausted. Drawing closer to the interview questions attention was mostly centred around issues, such as, Siphos fears, emotions, beliefs, challenges and convictions that he might hold regarding the NCS. These interview questions were at the root of the research question which formed the essence of the study. The interview started with knowledge questions aimed at getting into Siphos head of how he constructed the descriptions of his experiences with the Physical Science. The shift to the introduction of the NCS, the training he received prior to the implementation process, how he felt and what he thinks about the NCS. Husserl's principles of the *epoché* and *the essence of the things themselves* were adhered to during the data construction process.

The *epoché* in phenomenology refers to the notion that the natural stand point of the researcher must be bracketed when conducting the interview (Van Manen, 1990). Furthermore, the essences of the things themselves focus on unveiling the essence of every intentional act of the research participant. In so doing, Vandermause and Fleming (2011) point out, it is here where experience can be viewed ontologically and not subjectively. Heidegger, a student of Husserl, argues from an ontological perspective and points out that the research participant's views can be articulated in a contextualised way in order to make sense of his teaching world (pedagogy and curriculum). It can also be described as a representation of how he copes with his teaching responsibilities and at the same time how he perceives and responds to the NCS. The latter allowed me to present an interpretive account in narrative form of his experiences.

### **Field notes**

During the interview careful attention was given to the conduct and behaviour of the teacher. In this regard the focus was on the length of the pauses during and between questions, the positions or gestures he made when interviewed. Groenewald (2004, p. 15) posits that a researcher must exercise discipline by recording interviews and notes as comprehensively as possible without any bias or 'judgemental evaluation'. For example, issues such as what happened, and why? He argues that field notes must be taken no later than the morning after the interview. The researcher must also take notice of the non-verbal cues, the silences, and the word selection or repetition of certain words during a

response. A list of field notes on words based on hunches, impressions and feelings I got while the participant responded to my interview questions. These notes were made during the interview and the next morning as the researcher reflected on the individual participant's responses. Miles and Huberman (1984) comments that field notes must be dated so that the researcher can correlate them with the data

### **Data explication**

Sipho's transcript was scrutinized by grouping together related items and responses to untangle the 'knotted fish line of data' (Devenish, 2002, p.15) in an attempt to get an understanding of the language he used, based on his *choice* of words. In an attempt to comprehend the meaning of what Sipho tried to express during the interview, I placed myself inside his mind in order to live through his experiences. His responses were transformed into psychological language with an emphasis on how he experiences the curriculum in his consciousness. I found these transformations necessary because psychological aspects elucidate depths appropriate for an understanding of the events that took place in his life. In this part Sipho's descriptions of his lived world in the Physical Science classroom were retained as far as possible. In so doing I remain true to Husserlian phenomenology to write pre-reflexively a descriptive narrative of Sipho's experiences.

### **Descriptive Narrative**

I grouped the items reflecting similar responses together and derived at the following themes:

- Sipho's views on the shift from C2005 to the NCS
- Sipho's classroom experience and understanding (interpretation) of the NCS
- Sipho's responses to the training offered by the WCED in preparation for the implementation of the NCS

### **Sipho's views on the shift from C2005 to the NCS**

In this section Sipho described how he experienced the shift from C2005 to the NCS. He explains what it was like in the early days of the implementation phase and his struggle to overcome hindering forces that averted him from implementing the NCS, whilst I, in return, tried to reflect on his experiences. Sipho explains:

I entered the teaching profession as a Physical Science teacher in 1998. I started during a time where there was a lot of confusion. When I started teaching it was the introduction of OBE. Many of us were confused but I was in a better position because I was fresh coming out of school but we were always at logger heads with teachers that started teaching some time ago because of the new teaching styles I went through - that would be the curriculum 2005. There were lots of confusion.

Sipho describes the internal struggle of older teachers to accept the new policy changes prescribed by the NCS. He said:

You see the people that were my HOD he's coming from the old way of teaching. The traditional the old way, which was in the apartheid era. So we were always at logger heads as to how much we must teach and how much mustn't we teach the learners.

As he was searching his inner consciousness to re-live those moments and emotions in an attempt to represent his descriptions of how he felt, I noticed the seriousness and anger with which he spoke of how he felt at the time. His facial expressions and posture while talking with his arms tightly folded across his stomach in an attempt to hold himself together and not show too much emotion. His non-verbal gestures and long pauses between responses was an attempt to find more appropriate words to describe his emotions. It represented a symbolic sense not only to protect him but also to express his polite agitation towards his older peers. Haney, Czerniak and Lumpe (1996) noted that more experienced teachers' disposition towards curriculum change are signficatory to inspire novice teachers to respond positively to any new policy changes in education.

### **Sipho's classroom experience and understanding (interpretation) of the NCS**

When asked how he feels about the NCS and if he applies it in his classroom, he had the following to say:

One has no choice but to apply the NCS because you see OBE goes along with lots of things. There are many things that one needs to assess - even the seating of the learners. You can't allow learners to be sitting alone or on their own. You have to arrange them accordingly to accommodate the style of OBE. Now teaching OBE one has to teach with context in mind. ... I am there. I am comfortable with teaching with a context. I have always done that.

Contrary to Sipho's internal motivation and inborn drive of wanting to succeed at implementing the NCS in his classroom, the above citation suddenly describes the practicality and the demands the NCS places on him. It appears as if his teaching world and perception of the NCS becomes a struggle. Paraphrasing Husserl (1970) he tried to provide insight and understanding of what it means or feels like to live in his social space. His words, images and memories speak of someone being given a problem that he had to solve on his own, when he says 'one has no choice but to implement the NCS'. When I asked him whether he understands the complex terms and definitions (for example, learning outcomes, assessment standards, critical and developmental outcomes, progressive coherence) found in the policy document associated with the NCS to guide the teacher when preparing his/her lessons, he said:

After 13 years of teaching I must by now know and understand the curriculum. No, those concepts we have grasp them. We are confident with them now. They were a problem when the new syllabus was being introduced like the C2005 when they were being introduced we had to implement them but now

after about 13 years of teaching I think I understand them and how to prepare my lessons according to the assessment and critical outcomes in mind.

Furthermore, he stressed that he assesses his learner's regularly through activities, such as workbook exercises, questions, asking questions, tests, examinations, and allowing learners to work in groups. He explained further: 'all those tools I'm using them but when it comes to assessment I assess every day'. He iteratively notes that he did not experience any problems in working with the NCS or applying the philosophy that underpins the NCS. When asked how he feels about the curriculum, he stated:

You know, most of the time when I teach I'm teaching with confidence because this new subject was being introduced. I spent a lot of time on my own studying to understand them. Even the topics - I made sure I understand. You know what helped me would be the exemplars that were provided by the WCED. I was never taught those topics at school not even at *Pen Tech*. I was never taught but most of the things that I am teaching currently I had to read them on my own to understand.

The following citation describes what Siphso considered as most challenging about the NCS: My biggest challenge was first of all I did not know how to prepare my lessons with the critical and developmental outcomes in mind. During that time I only went to class not knowing while teaching whether I was meeting the demand of those critical and developmental outcomes but after some time I learned what was expected of me and did so.

When asked what his views are about whether or not the NCS improves the quality of science instruction he said:

You know the NCS unlike the old syllabus that I went through in high school - there are lots of new topics that are challenging even to educators. Even so this is (a) very good thing because teachers have to learn new things and at the same time learners are being better prepared for their tertiary education. In fact I am preparing these learners.

Siphso is of the opinion that the NCS stretches the intellectual potential and abilities of the learners. It makes him very happy to see his learners progressing and doing well at university. He feels that he lives up to the standards and expected demands of the NCS. The following citation serves as evidence for the latter:

I started teaching at a very young age. When I started teaching I only had a Diploma and my colleagues will be asking me why I am not completing my degree. The reason is because of the demands of the NCS basically. I am one of the educators that would stay until very late after school, the first one to come and the last one to go out. When it comes to the NCS that is what stripped me of my livelihood. There was much confusion when it came to the

NCS and one had to read a lot to and try to study to understand the content so my education suffered. Therefore I can say that I lived up to the standards. I am a lifelong learner and am slowly becoming a specialist.

### **Sipho's views on the training offered by the Department prior to the implementation of the NCS**

The following quote describes Sipho's view on the training he received:

You know, the workshops conducted by the WCED, they were not helpful at all. I would say if I can rate them they would be 20% helpful. The other 80% was more confusing. You know why I am saying so? It's because the WCED they took some of us and made us curriculum advisors. Those curriculum advisors were the ones that were also confused. Those guys they were given the opportunity to come back to us. One could sense they were not confident. They did not know what they were saying in those workshops. At least when it came to the content at least now there were Professors. I can still remember Mr Frans. He's working for the WCED Metropole North. Ja, those guys helped us with the content ... their workshops at least made sense.

When asked how he felt about the duration and when the training he received was offered he propounded:

I still remember we'll stay after school ... when one is tired. We'll stay for two to four hours or on Saturdays two to four hours. That is the maximum time we spent on those workshops. Some of the workshops were also offered during the June holidays for a period of one week.

Sipho lists the following concerns regarding the training: (i) who offered the training, and (ii) the inconvenient time teachers had to go for training. In an earlier excerpt he pointed out that the workshops were too short to fit in all the learning material, and in the above quote he highlights that the training was offered during school holidays, weekends and after school.

### **Interpretive narrative**

To explicate and interpret Sipho's transcript I followed Heideggerian phenomenology. Heideggerian phenomenology, as cited by Van Manen (1990) and Conroy (2003), fosters a synergy between interpretative intentions and practical interpretation. Heideggerian phenomenology allows one to delve into Sipho's epistemological and ontological discourses of his experiences. Hence this section will discuss the environment in which Sipho teaches and the influential role of his older colleagues and HOD on how he views the NCS.

Sipho alludes to how his *freshness* from school and university paved the way for him to implement the NCS. His initial attempts to implement the NCS were discouraged by his older peers and HOD. Melville, Hardy and Bartley (2011, p. 2276) argue that the majority of

science teachers struggle to venture into new pedagogies associated with curricula change as they face many challenges. Some of these challenges are that: (i) most of these teachers have a limited conception of the nature of science, which consequently places a restriction on their teaching repertoires, (ii) some might lack sufficient and syntactic content knowledge, and (iii) others may have limited experience with the new curriculum.

Sithole's (2004) empirical work on curriculum implementation in South Africa found that experienced teachers may not have experience in implementing an outcomes-based approach or they may have a limited understanding of the outcomes-based curriculum. Therefore, Siphso constantly referred to them as being confused. According to Sithole (2004) such teachers are still at their infant stage in working with the NCS (as it was when OBE was introduced). They used their own perceptions and experiences with the learners, and knowledge about teaching and learning to guide Siphso as a novice teacher to incorporate what they think works in their school.

Melville, et al., (2011, p.2276) asserts that formidable challenges await teachers who contemplate to confront the hegemony of traditional teaching strategies without sustained support to overcome such challenges. Bourdieu (cited in Melville, et al., 2011) espoused that social worlds, such as, departments (in this case the science department at Siphso's school) are comprised of different social spaces or 'fields' within which individuals contest. These contests occur between individuals whose dispositions or 'habitus' make them more likely or able to engage in the stakes of particular fields. These social spaces are represented subconsciously to orient a person's actions. For this reason, individuals perceive the same opportunity differently because of different dispositions. This explains how Siphso's colleagues developed and adopted a 'habitus' through which they define the relationship between learners, the learning culture and its associated change. The net result as in Siphso's case is the development of 'a space of conflict' and competition. The older teachers are dominant and the new ones are dominated as they seek to develop influence within the department.

### **Siphso's understanding and interpretation of the NCS for Physical Science**

The need for teachers to possess specialised knowledge and skills (acquired through years of teaching experience and professional development) are at the core of successful implementation of a curriculum. Siphso's descriptions, as represented in his transcript, point out that he had to undergo a lot of self development through self study and sacrifice. He mainly used assessment tools provided by the department (such as, exemplars, old question papers and examination guidelines) to plan and deliver the content to his learners. A myriad of research studies in South Africa with regards to curriculum implementation has shown that assessment instruments, such as, old question papers and workbook exercises exert direct control over curriculum and teaching practices in almost all grades in the schooling system (Mhlolo & Venkat, 2009). Furthermore, teachers place a great deal of emphasis on what is assessed (in examinations) in their preparation and teaching of subjects (Mhlolo & Venkat, 2009, p. 36). As a result, teachers teach old question papers and exemplar questions to learners. Siphso's teaching style and subsequent understanding of the

NCS is not much different. He considers these instruments (old question papers and exemplar papers) as the driving force and firm bases of his teaching. He did not mention the nature of science nor learner needs as the basis for the delivery of the curriculum. The diagram below (Figure 3) illustrates how Siphon plans and teaches based on his descriptions. The materials he uses to plan and conduct his lessons determine ‘what his class is aiming at’ (LO’s), ‘what to teach’ (curriculum organization), and ‘where to look for activities and information’ (resources). Siphon feels his knowledge of teaching is linked to his knowledge of assessment and what he considers important for the examination. He relies on old question papers and exemplar question papers supplied by the DOE to coach his learner in preparation for the examination. His teaching does not reflect the goals and objectives stipulated in the NCS and he shows disregard for the learner’s prior knowledge with regards to the topics in the syllabus.

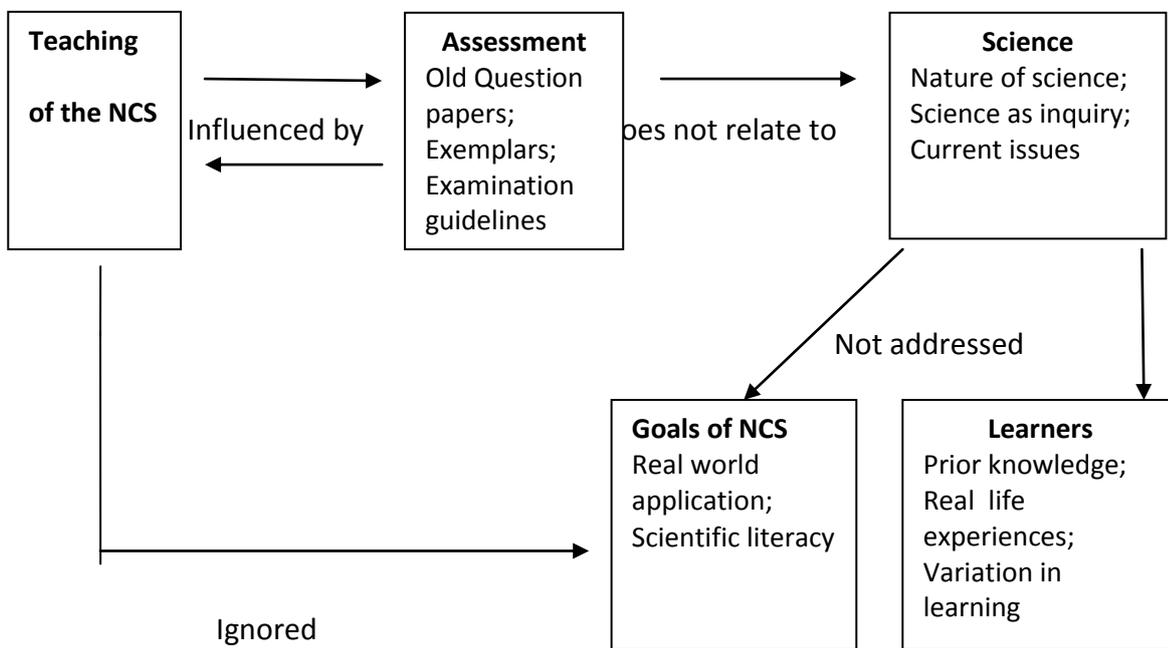


Figure 3: Siphon’s conceptualization of the NCS

## Conclusion

This article offered a phenomenological recount of a Physical Science teacher’s lived experiences whilst implementing the NCS. It provided both a descriptive narrative (using Husserlian phenomenology) and an interpretive narrative (using Heideggerian phenomenology) to report the findings. The article focuses on the being ‘itself’ and the being ‘in the midst of the curriculum delivery process’. In this article we discover Siphon’s fundamental relation to the curriculum, and his relation to his peers and colleagues. The findings indicate that Siphon’s exposition from the onset was to become one with the curriculum. His desire to implement the NCS is revealed in his responses to his peers. His

action 'being at logger heads with his peers and his HOD' points to his choice of 'being'. Heidegger would outline Siphó's existential experiences and the development of his phenomenological attitude by suggesting that his (Siphó's) psychic qualities from within might emerge from various metaphysical and ethical experiences during childhood, namely, his struggle as a learner of Physical Science.

The most striking finding about Siphó presented in this article (which is also the unifying motive of this article) is his consciousness as a revelation of 'being' and 'being in the midst of the implementation process'. As a result of the latter one can now with greater insight and understanding relate to how difficult it is to change one's practice amidst poor support structures. From his responses to his peers and colleagues (who repeatedly attempted to ridicule him) one can perhaps observe (through his positive outlook of wanting to teach according to the principles of the NCS) the beliefs that he holds to disregard the objections directed against him. The external resistance that is always present is substituted with his internal desire to make a difference in the lives of his learners. For this reason Siphó stated that the value of the NCS is that his learners are better prepared for careers in science and this makes him 'very happy'. Siphó's philosophy is not idealistic because in his consciousness he sees himself as an active implementer of the NCS despite his challenges with poor training, lack of quality textbooks, and inadequate content knowledge.

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