

In the Mix:
Exploring Urban Black Youth Culture in
Desegregated Life Sciences Classrooms

By

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Thesis submitted in fulfilment of the requirements for the Degree of
Doctor of Philosophy in the School of Education
College of Humanities
University of KwaZulu-Natal

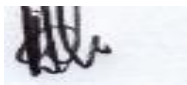
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January 2017

DECLARATION

I, Lifeas Kudakwashe Kapofu, hereby declare that this thesis: **In the Mix –exploring Urban Black Youth Culture in desegregated life sciences classrooms** is my original work and has not been submitted for assessment or completion of any postgraduate qualification at any other institution. All sources used and quoted have been acknowledged in the text and in the list of references. I declare that all names mentioned in this work are pseudonyms.



L.K Kapofu

13th January, 2017

Date

We hereby declare that this thesis has been submitted for examination with our approval.



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13th January, 2017

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.....

Dr Michèle Stears

13th January, 2017

Date

DEDICATION

This study is dedicated to all the humble giants on whose shoulders I stand.

ACKNOWLEDGEMENTS

I acknowledge and express my deep gratitude to:

My family; Wyn, Chantelle and Christian,

For enduring my long absence as I immersed myself in this exploration.

My supervisors, Dr Angela James and Dr Michèle Stears

For your unrelenting support, even during those moments when I found myself in the mix. You are a winning team.

Our parents, Andrea, Saxon, Violet and Selena,

For sacrificing everything and all the prayer. Always in my heart.

All the participants,

For opening up your worlds and raising your voices so that I could learn. Without you this work would not have been possible. To the courageous Urban Black Youth, thank you.

ABSTRACT

Through an anthropological approach, in the form of a focused-ethnography, this study explored urban Black youth culture (UBYC), in the life sciences classrooms of a desegregated former model C school. In the exploration of UBYC the study was guided by the four research questions the address of which helped explain the context in which UBYC was created by UBY; the nature of this created culture and lastly; how and why it influenced the teaching and learning of life sciences.

This study was trellised on a conflated conceptual and analytical framework which informed the nature of the research questions, research design and methodology. Such a conflated framework included: Schein's (2004) organisational culture model for cultural analysis; Ryan and Deci (2000) Self-Determination Theory of Motivation; Bourdieu's (1991) social imagery and Foucault's (1997) notions of power. Using multiple methods, qualitative data were collected over a six month period. Data were analysed and interpreted against the analytical and conceptual frames and a report was compiled.

Key findings of this study included the identification of the culpability of the context as structured by players in the life sciences classrooms in the creation of UBYC. Such contextual shortcomings included: classrooms in which culturally responsive pedagogy was not operationalised, classrooms contexts which were falling short in addressing learners' needs for autonomy, competency and connectedness, and lastly, operationalisation of power in ways that escalated classroom conflicts. Schein's (2004) model was used to decipher life sciences teachers' assumptions. Through knowledge of the teachers' assumptions and observation of their classroom practices, the context in which UBYC was created was established. It was from this understanding that UBY assumptions were deciphered.

The deciphering of UBY cultural assumptions provided for the interrogation of how UBYC was influencing, and why it was influencing the teaching and learning of life sciences. It was found that UBYC enabled UBY to trivialise life sciences as a discipline, speak disparagingly about their teachers, disrupt classroom proceedings, sometimes openly defy or aggressively engage with their life sciences teachers. UBYC enabled UBY to perform such enactments as it allowed them to feel superior, powerful, connected and competent.

It is envisaged that findings of this study would provide a lens for viewing contemporary classrooms. This perception is critical in deciphering and explaining phenomena that may be perceived as indiscipline and behavioural challenges. This study culminated with the development of a model for cultural studies in classroom settings. It was my view that such

a model will help teachers in multicultural classrooms explore culture, as cultural understandings and their harnessing for instruction is the ultimate challenge that comes with diversity.

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ABBREVIATIONS

CAPS	Curriculum and Assessment Policy Statement
CET	Cognitive Evaluation Theory
CRP	Culturally Responsive Pedagogy / Culturally Relevant Pedagogy
DoE	Department of Education
IKS	Indigenous Knowledge Systems
NHS	Northlea High School
SDT	Self-Determination Theory
UBY	Urban Black Youth
UBYC	Urban Black Youth Culture

PROLOGUE

I begin this thesis by relating the conversations that prompted this study.

“Mr Kay, I’m not going back to that class. They just can’t keep their mouths shut. They can’t allow me to teach. I think we need to reshuffle them, because there are a whole lot of Black learners in that class and they are also speaking in isiZulu.” (Personal communication, Indian female life sciences teacher, 2012)

“So they say they don’t want to be taught by me, they would rather come back to you. Tell me what is it that makes these Black learners do what they do. I’m not a racist, but honestly, I don’t know how to handle them anymore. They are frustrating me. I want to teach them, but they limit me, they are so limited. Why can’t they be just like all the other kids, I mean just normal and regular?” (Personal communication, White female life sciences teacher, 2012)

The above incidents generated questions within me and provided an unexpected opportunity to reflect. I knew that my colleagues were not overtly discriminatory and in no way could I conclusively attribute the situations in their classes to racial tensions. I took it that what my colleagues brought forth were cries for help. I also began to visualise the desperate situation in these contexts in which learners had become a challenge and were no longer *normal* and *regular*. What I got from my colleagues was the official story, but I deeply felt there was another unofficial narrative missing from the official story that would make the challenges encountered by my colleagues more understandable. It was at this point that this journey began. It was not a light decision, as it was a journey of conviction. I was convinced there was something that needed to be known about the context as well as the participants in this context both at a micro and macro-level. There was a need to understand the context in which my colleagues and learners operated in; what the Black learners were like in this setting; how what they were doing or not doing was influencing this context; and ultimately why they were doing what they were doing? As I reflected on these questions and thought of a response for my colleagues, I began to envision a tradition of teaching whose aim was to cater for the unofficial story. I began to entertain the possibility of excavating the context to inform this tradition of teaching. The purpose of this excavation being to learn more about the context as well as of and about urban Black learners in such a context.

In my pedagogical utopia I envisioned that effective and fruitful classroom engagement needed to transcend unique essences. Such a transcendence needed an exploration of a neutral and progressive human construct that operated beyond the stricture of race and notions of deference. It was at this point that I looked to culture as an avenue for exploring what was happening in the life sciences classrooms at Northlea High School, (NHS). In adopting a cultural lens to examine this context I heeded Bruner’s (1996) resolve that curriculum goes

beyond what is spelt out in policy and only becomes meaningful if culturally contextualised. Research evidence also encouraged me to look to culture. According to O'Donnell and Boyle (2008) when organisations are experiencing change, challenges tend to arise from cultural dissonance. Thus, in embarking on this study I believed that in demographically changing contexts such as the one we were in, culture would be a fruitful avenue in ascertaining, understanding and explaining what was unfolding in the life sciences classroom context. With this understanding it was my notion that it was only when the context was ascertained and the participants in the life sciences classroom understood at a cultural level that what my colleagues had brought up could be named and explained. Another reason I looked to culture was its ability to unravel that which is beyond the visible and conscious but still important for enhancing performance and productivity in micro-contexts like the life sciences classroom (O'Donnell & Boyle, 2008). Lastly, whenever there is a group, culture becomes important. According to Schein (2004), groups are constituted by culture and construct culture. Thus, understanding a group's culture constitutes an understanding the group. My colleagues had difficulties and needed to understand a group of learners and this entailed an exploration of the group's culture (Schein, 2004).

Even though I envisaged trying to understand the context in totality, it was my view that a focus on one constituency in the life sciences classroom context was going to be more fruitful. I therefore decided to focus on the Black learners. This decision was primarily based on the issues presented by my colleagues who had characterised them as problematic, academically deficient and overtly disruptive. As I undertook this study it became my intention to understand whether there was a cultural phenomenon at play especially with these Black learners, or was it just adolescent misbehaviour. My intentions were fuelled by multiple intriguing questions which included: what was the nature of this culture; how was it influencing the teaching and learning of life sciences at NHS; why was it influencing teaching and learning in the manner it did; and in what context had it developed and was functioning? My research agenda was thus set.

In this study I use the term *Black* to refer to the dark-skinned inhabitants of Africa and their descendants in the diaspora. I follow after Gabriel (2007) by narrowing the usage of the term Black to refer to Black African people. I use the terms Black and African interchangeably in this study but in reference to the same group of people. However, the term Black will be used throughout this study. Whenever the term African or people of colour is used in this work it will denote being Black. The logic behind this classification being that Africans are Black

because of their distinct history, culture and identity. This is a deviation from the Black Economic Empowerment Act of 2003 which uses *Black* as a generic term which includes Black Africans, Coloureds and Indians and as of 2008, the Chinese people as well (Department of Trade and Industry, Schedule 1, 2007).

As I focused on Black learners I also had a choice to make on whether to consider all Black learners in the life sciences classroom context. In reviewing literature I discovered that Black learners may be placed into typologies based on how they negotiated their schooling. According to Sewell (1998) the four typologies are: the conformists - those Black learners who accept both the means and the goals of schooling; the innovators - those Black learners who accept the goals and reject the means of schooling; the retreatists - those Black learners who reject both; and the *rebels* - those Black learners who reject both but replace them with their own agenda. Cognisant of the stereotypic nature of these typologies Sewell (1998) reworked them and came up with a two-group typology which I adopted and used for this study, in as far as the inclusion and exclusion of some Black learners was concerned. According to Sewell (1998) the first group consists of those Black learners positioned or who have positioned themselves in line with the discourse and cultural forms of the school. The second group consists of those Black learners who have been positioned or have positioned themselves oppositional to school discourse and cultural forms. Those brought to my attention by my colleagues from Sewell's typology seemed to belong to the latter and for the fact that they resided in an urban area and were youthful. On the basis of these attributes I began to refer to their culture as *Urban Black Youth Culture* (UBYC). It was my view that those Black learners who constituted Sewell's first group were not critical for the study because they were congruently positioned or had positioned themselves in ways in which their learning opportunities were not limited as compared to the latter group. It was thus my notion that it was the participants in UBYC or the urban Black youth (UBY) who needed to be researched and understood at a cultural level.

CHAPTER ONE

SETTING THE SCENE

1.1 INTRODUCTION

My intention in this chapter is to foreground the indispensable need for exploring UBYC in life sciences teaching and learning contexts. In this study, as alluded to, I focused on UBY and UBYC in a former model C school. The questions that arise are; Why urban Black youth? Why study their culture, and why study their culture in the context of life sciences in a former white school? The first chapter of this study seeks to introduce this study by providing a background that outlines the socio-political developments through which the research context has gone through as part of the various dispensations that have characterised South Africa's socio-political landscape. Through the rationale and problem statement, I endeavour to offer an analysis of the current intellectual debates amongst those concerned with the study of transformation in education whilst reflecting on the academic status of UBY in life sciences classrooms at NHS.

1.2 BACKGROUND TO THE STUDY

This section explores some aspects of the research context against the backdrop of South Africa's transition from apartheid to this democratic dispensation. The exploration begins with the history of Northlea High School and its connection with the South African narrative. This section thus offers an overview of the status quo.

The popular notion of what it is like to teach in urban schools in South Africa is dominated by extremes and in-betweens. The one extreme is concerned with the *horror* stories fuelled by the media of schools in chaos with dilapidated infrastructure, incompetent principals, gangsters, drug dens and orgies, learners who fail to achieve the minimum standards and parents who are uneducated and unconcerned. The other extreme concerns the *elite* schools where classrooms are air-conditioned, lawns trimmed and learners are gentlemen and ladies, tuition is personalised and the infrastructure is impeccable. Somewhere in between these two, between the gentleman and the gangster is Northlea High School (NHS), where I teach and my journey begins.

The advent of democracy in South Africa through universal suffrage saw the organisational transformation of schooling through the introduction of school models. According to the National Education Policy Investigation (1993) (NEPI), schools were

presented with three models to choose from with regards to how they were to conduct their admission and school governance. These models included:

Model A- private school established after the closure of an ordinary public school and was to be subsidised with 45% of its operational expenditure.

Model B- public school which constitutionally determined its own admission and whose operational expenditure was wholly covered by the state.

Model C- an ordinary school which was declared state-aided school and the state paid staff salaries (Lemmer & Badenhorst, 1997).

NHS is a former model C (mCs) high school located in the middle-class suburb of Northlea, about fifteen kilometres west of one of South Africa's sprawling port cities. The school opened its doors in 1969. The port city where Northlea High school is located has been greatly influenced by English traditions, and the city still bears the name of a prominent English person who was a governor of the British outpost in South Africa in the 1800s. The suburb of Northlea was and has remained predominantly White, even though after the advent of democracy other race groups have bought properties or leased houses in the area.

NHS catchment area consists of six White middle-class suburbs that surround it. But, with the advent of democracy in 1990s the catchment area of the school has extended beyond the borough with learners commuting from the surrounding Indian and African townships. In 1992, NHS enrolled its first two Black learners whilst its overall enrolment hovered at one hundred and fifty boys. Indian learners at this point were also making significant enrolments as their parents started buying properties in the suburb of Northlea after the Group Areas Act of 1950 had been repealed in line with political reforms of the 1990s. Chisholm (2005) whilst evaluating educational transformation after apartheid came to the conclusion that if race separation was the defining feature of schools in apartheid South Africa, race integration became the defining feature in the post - apartheid era. The South African Schools Act (1996) provided the basis for the reconstruction of previously segregated schools in the image of non-racialism and forbade all forms of discrimination. Democratic governance made provision for the integration of schools, the rewriting of the curricula and text materials and renewal of support structures in the management of the country's education (Meier & Hartell, 2009). The enrolment of Black learners increased in former White, Indian and Coloured schools (Chisholm 2005). This move had a dual effect: firstly, it increased the Black learner population at NHS,

whilst precipitating drastic decline in overall enrolment of White learners due to white flight to other areas (Meier & Hartell, 2009). This demographic transformation has conspicuously played out in mCs, NHS included.

In 2002, NHS was officially integrated. After 2002 the viability and sustainability of the school was threatened by *white flight*, a situation which prompted the Department of Basic Education (the legislative body that governs primary and high school education) to convert NHS which up to this time had been a boys-only school into a co-ed English-medium school. This decision led NHS to open its doors to female learners in 2004 (NHS prospectus, 2015). As presented in the graphs below (Figure 1.1), the complexion of NHS has been changing ever since. From the demographics captured and presented in figure 1.1 it is clear that NHS has become a socio-cultural crucible or a cultural melting pot and a frontline for the realisation of the *rainbow* dream. This demographic transformation manifests itself in life sciences classrooms as indicated by the uptake trends. Figure 1.1 also shows an increased uptake of life sciences. Consideration for life sciences has specifically been made because this study focused on the life sciences context.

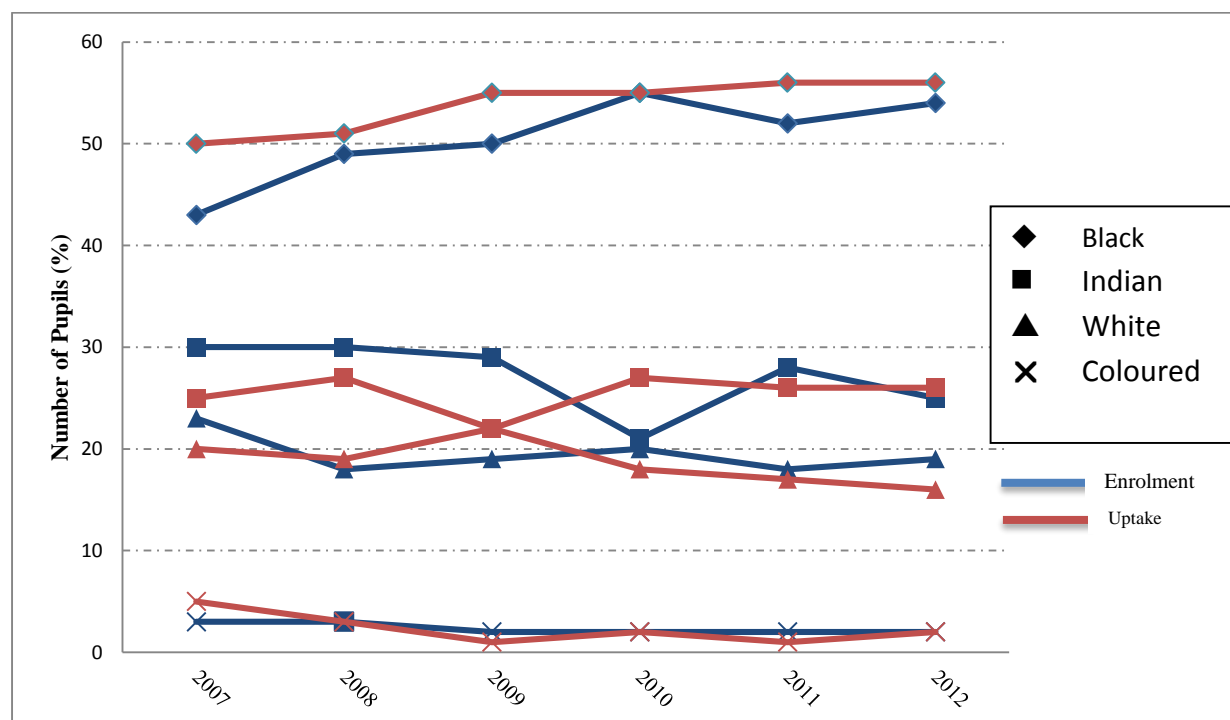


Figure 1.1 Graph showing school enrolment and life sciences uptake by race groups at NHS

Another notable demographic feature about NHS is that whilst there has been an increased enrolment of Black learners, the teaching staff has remained predominantly White

and Indian. After making similar observation in his studies Jansen (2004) concluded that the Achilles heel of former White schools has not been the accommodation of Black learners in former White classrooms, but not having Black teachers in the same schools. This demographic skew has been attributed to multiple factors which include deeply ingrained, racialised notions of White competence and Black incompetence (Jansen, 2004). Other scholars like Meir and Hartell (2009) attribute the racial skew in staffing to the principles of upholding race-based standards in desegregated contexts. The latter scholars contend that the underlying belief in the purported maintenance of standards is that the identification of these schools as *excellent* is based on a specific racialised outlook. From such perspectives, Soudien and Sayed (2004) argue that as much as the South African Schools Act is democratic, new racial discourses, practices and repertoires have come into being in South African schools. They regard this discourse as the stain on the South African conscience and the paradox of its democracy. It is however important to recognise that at the core of post-apartheid legislative instruments is the aspiration to establish an equitable socio-political context. From such a legislative base Vandayer and Killen (2006) posit that not only was the groundwork for institutional integration laid out, but opportunities were availed for all cultures to flourish irrespective of physical space. Equity in this democratic dispensation, thus, becomes an attribution of equivalent value to all cultural capital. In such a context “each social group is seen as having contributions of equal value to make to all other social groups in the larger social unit” (Vandayer, 2003, p. 194). This was the supposed general architecture of schooling arrangements in desegregated contexts, but was this the situation at NHS? How far had NHS progressed in realising the vision of a ‘new’ South Africa? With such a sound contextual template, where were the issues brought up by my colleagues coming from? Was NHS by some means, failing to fit into the mould cast for educational institutions in a rainbow nation? Such questions from this background information deserved an interrogation of the context to determine if it had any influence on what was unfolding in the life sciences classroom.

1.3 RATIONALE FOR THE STUDY

When my colleagues related their experiences with UBY, three issues troubled my mind. I had to discard the rhetoric of classrooms as spaces where domination and oppressions permanently existed to a view of them being democratic spaces where all individuals had agentic power. I had been socialised and trained to believe that the teacher was in-charge but now it seemed there was a new power. Secondly, as I became aware of the power of the learners, I began to question why Black learners were portrayed in research and routine

conversations as victims and as eternally subjugated and needing emancipation. Thirdly, having taught urban Black learners and witnessed their unlimited *being*, both in and out of class, I began to question explanations about Black learners based on deficits and difference. I also began to question notions of UBY being in cultural crisis and being torn between contradictory identities (Youdell, 2003; Vandayer & Killen, 2006). With these issues in mind, I realised my and our collective ignorance as life sciences teachers of who exactly was sitting before us. Who were they? And where were they assuming their power from? I reckoned UBY were a powerful entity that needed to be understood and our knowledge was dangerously lagging behind the reality that had unfolded before my colleagues. This reality required an empirical re-conceptualisation of the life sciences context and UBY and a conceptualisation of UBYC. The implicit belief being that such an understanding would foster the evolution of effective educational strategies and knowledge to better serve them in the life sciences context.

From the outset, I want to point out that this study did not endeavour and will not prescribe steps for cultural accommodation in life sciences classrooms like those that science education programmes and many professional development programmes provide. I sought to understand and interpret what was unfolding and had been reported by my colleagues in the classrooms at NHS. Through this study I sought to present an alternative knowledge by which the life sciences classrooms discourse at NHS could be explained. Therefore, the research was motivated by a voluntary epistemic insubordination on my part, as I refused to accept what my colleagues had brought to my attention at face value. Having assumed such a stance, I pursued the insurrection of possible subjugated knowledge of and about UBY in the form of UBYC that would explain the reality that had unfolded.

As a learning mediator, the teacher is called upon to mediate learning contexts in a manner that is sensitive to the cultural diversity of the learners, show respect for difference and appropriately contextualise learning materials (Villegas & Lucas, 2002). From what my colleagues had brought to me (prologue) this study sought to explore the socio-cultural dynamics of life sciences classrooms in these schools vis-à-vis UBY and the amenability of life sciences teachers in dealing with cultural diversity, which is characteristic of desegregated contexts. It was my view that understanding the context may have been critical in understanding the way UBY were positioned vis-à-vis the classroom discourse. Could it be that the teachers were structuring the classroom in ways that positioned UBY oppositional to norms? Or was it just agentic expediency on the part of UBY that positioned them as such? Such questions made context interrogation a research imperative.

After my conversations with my colleagues I began to read literature on Black learners in education. It was during this reading exercise that I came across Emdin's (2010) treatise *Urban Science Education for the Hip-Hop Generation*. Through the use of Hip-hop and Rap culture Emdin tried to nurture the agency of Black youth and harness it for science instruction. Through this approach he has been able to not only enhance their academic success but also nurture their critical consciousness. Emdin's (2010) work and innovation in science teaching among the inner city Black youth in Brooklyn, United States of America motivated me to explore the possibility of culture-conscious innovations in multicultural settings such as NHS. It was my conviction in undertaking this study that possibilities existed in such an approach, but the critical ingredient needed was an understanding of the urban Black youth culture as produced and reproduced in specific contexts like NHS. My conviction was that once an understanding of the nature of urban Black youth culture was achieved, the pedagogical possibilities could be explored. This study set out to do just that, that is, explore the agency of urban Black youth and catalogue its cultural structures and then explore its possibilities as a teaching and learning resource.

Though consideration for statistical information is important I believe a human story tells more than statistics. This study acknowledges that youth have become dominant players in the twenty first century, hence their input has become invaluable in institutional reforms as "consumers worth consulting and expert witnesses in their learning" (Swartz, 2009, p.5). Like others researching learners' perspectives, Nieto (1994) found that young people were pleased to be respondents in educational surveys and gave meaningful answers. Such observations led Nieto (1994) to conclude that youth are agentic and reflexive. In the case of her own research on learners' perspectives, Nieto (1994) found that although they often appreciated and applauded their teachers and the work they did, learners were also critical of some practices and attitudes of their teachers. Nieto's observations provided a rationale for me to learn whilst listening to the learners, especially UBY emerging from a history of exclusion so that I could directly access the *unofficial* story about them. Likewise, this study contends that UBY views have important implications for transforming curriculum and pedagogy and for educational reform in a new South Africa. The suggestion that Nieto makes is that if learners' views are sought; insights gleaned from them are crucial for developing meaningful, liberating and engaging educational experiences. I undertook this study as an act of seizing a powerful opportunity presented by my colleagues' concerns to learn if there was anything that could be termed, UBYC. I wanted to correct the mistake we make in education which is "listen to outside

experts to inform us, and consequently overlook the treasure in our very own backyards: our learners” (Sooahoo, 1993, p. 390). Thus, I embarked on this research as a learning journey, where I took off my hat as a teacher and became prepared to listen to UBY. I needed to learn so I could know. I was willing to validate the identities and worth, which UBY brought to the teaching and learning environment (Meier & Hartell, 2009). This entailed crossing the power divide to extract from the UBY world - the socio-cultural attributes (animate and inanimate) that needed to be considered in life sciences teaching and learning.

Lastly, as I examined the context I strove to establish whether there was any obvious consideration for UBYC in the life sciences classroom. This is in line with the Department of Basic Education’s (DoE) Multicultural Education Initiative (2012), which seeks to recognise and respect the difference among all learners whilst opening up and enhancing learning opportunities for all learners. This initiative seeks to overcome barriers that prevent the DoE from meeting the full range of learning needs of diverse groups in the hope of increasing the capacity of teachers to cope with all forms of learning needs. While researchers have identified the importance of a focus on learner culture and indigenous knowledge systems, they have not considered the cultural ramifications of externally facilitated desegregation on classroom dynamics. In addition, they have not considered the ways that, UBYC in South Africa relates to life sciences, a subject that Black youth have mostly been marginalised from historically.

The spirit of the rationale of my study is best captured by Gonzalez-Espada (2004) who believes that diversity in the classroom is both a challenge and an opportunity. It is a challenge because our knowledge and skills for effectively teaching diverse learner populations has not kept up with the influx of learners we need to serve. However, diversity is an opportunity to teach about the joy of experiencing a variety of cultures, languages, and of respecting all people. The realisation and materialisation of this opportunity lies in deliberate overtures being made to generate knowledge about such contexts – hence this study.

1.4 PROBLEM STATEMENT

A change in the cultural composition of schools after apartheid brought with it challenges for administrators, teachers and learners. Firstly, increasing cultural diversity in educational institutions necessitates that teachers teach and manage learners with cultures and backgrounds unknown to them (Emdin, 2010). Secondly, this cultural diversity presents challenges because the opening of schools to all races does not automatically ensure mutual understanding and acceptance between teachers and learners and amongst learners themselves (Du Toit, 1995).

Thirdly, there is need for the provision of optimum teaching and learning conditions that will satisfy the needs of most learner populations in classrooms. The last critical challenge is to develop classroom climates which are conducive to meaningful learning and mutually beneficial social inter-relationships between learners and also between learners and their teachers, and to integrate these into the teaching and learning context for effective schooling. So, whether classrooms become an epicentre for productive engagement and experiences that serve as an oasis for intrinsic motivation or an alienating experience becomes a variable dependent on how the teaching and learning context is structured. These experiences are both affected to a large extent by the teachers' exposure to and comfort with the culture of their learners (Emdin, 2010, Gay, 2010; Ladson-Billings, 1995). Thus, teaching in culturally diverse contexts becomes the crucial interface between what learners aspire to achieve through education and that which learners will attain through education.

Attempts at responding to the realities of South Africa's diversity, at both institutional and legislative levels, have resulted in great challenges for teachers in post-apartheid South Africa (Meier & Hartell, 2009). The inherent conviction in these attempts was that curriculum reform would suffice to serve as a vehicle for change and a responsive tool to accommodate multiple cultural realities in a democratic and desegregated South Africa education sector (Vandeyar, 2003). However, adoption of policy alone seems not to have been the panacea for these challenges as the concerted efforts of teachers as the individuals who interface between policy implementation and provision of quality education remains crucial (Jansen, 2004). The aspiration of curriculum reform has been that teaching should cease to be a transmission of fundamental scientific knowledge (Gallagher, 2000), but culturally inclusive. Such a curriculum shift has been necessitated by the socio-political acknowledgement that the transmission model of teaching is often construed as cultural imperialism (Aikenhead, 2004). In mitigation of such an indictment, the call is that in multicultural contexts, teaching needs to proceed through deliberate culture-conscious practices. The inherent belief in the advocacy of this approach is that it is thought to lead to the appreciation of the schooling enterprise which may result in successful and productive interactions in the classrooms. The question that begs is: Do we as teachers in South Africa have the knowledge to transact a culture conscious pedagogy? Whilst commendable transformation has taken place in South African education, a tracking of change in desegregated schools indicates the persistence of non-inclusive practices and marginalisation of some cultures (Soudien & Sayed, 2004). The ill-fate of South African transformation is further exacerbated by the limited roll-out of initiatives aimed at promoting

cultural inclusion through addressing issues of diversity and inequality (McKinney, 2005). The challenges encountered by my colleagues seemed symptomatic of the persistence of cultural marginalisation. From their intimations it was possible that there may have been a persistence of limited access to life sciences for the Black learners. Such a situation was problematic and socio-politically unsustainable considering South Africa's history.

The limited success of reform initiatives aimed at accommodating diversity in schools has been attributed to the majority of practising science teachers who have not been prepared to address cultural diversity within their classrooms and how to incorporate cultural literacy into science (Lee, 2004). The other weakness in these initiatives has been that they have not tackled challenges presented by the hidden curriculum, hence the call by Bennet (2015) that school interventions should above all be poised to tackle the hidden curriculum. One vehicle through which the hidden curriculum is peddled in schools, is culture. Thus, attempts at tackling the hidden curriculum prompts us to rethink how we can strategically develop cultural knowledge that can be used to construct learning opportunities and spaces in which Black learners will be able to insert themselves into the democratic processes in the curriculum. Research on educational transformation in South Africa has shown that attempts at catering for diversity in education have not succeeded due to limited cultural knowledge (Carrim & Soudien, 1999; McKinney & Soudien, 2010; Meier & Hartell, 2009; Pillay, 2004). The impact of these studies and their findings has been bi-pronged: firstly, they reveal limitations in the system at a macro-level and, secondly they devolve the responsibility for intervention to the teachers. Teachers in classrooms are thus faced with the responsibility of developing strategies and understandings critical for operating in contexts characterised by diversity.

Research in South African education has largely been premised on a post-structural paradigm especially with regards to identity and difference. Such approaches have had little influence on understanding and limited impact on classroom practice (McKinney & Soudien, 2010). Such research has promoted and sustained essentialist constructions of race and most importantly for this study, culture (Chisholm, 2005; Tihanyi & du Toit, 2005). Researchers like McKinney and Soudien (2010) further point out that despite there being a glut of research, there is little evidence of the academic debate on multiculturalism and difference in education having filtered down to the level of the school and even more crucially to South African classrooms. There is therefore an epistemic void, especially of learners (like UBY), a void which makes it difficult for teachers to maximise learning opportunities for such learners. In life sciences classrooms, initiatives premised on the post-structural agenda have seen

curriculum emphasis being placed on indigenous knowledge systems and home experiences that learners bring to school. Such initiatives have to be applauded as noble but their shortcoming, other than being essentialist is that they have left a knowledge gap as they do not consider who the learners are in school. The approaches do not entertain the agency of the learners in learning context which is problematic. From my colleagues outcry they were not having difficulty with indigenous knowledge or home issues, but rather, who the Black learners were in their classrooms. Negation of who the learners are in classrooms in research and intervention initiatives seems to have hamstrung these initiatives. It is my view that addressing what my colleagues brought up needed to go beyond the constructivist approach which calls for transfusion of learners' out-of-school experiences to an approach that sought to explore who UBY were in the life sciences classroom. Such a shift is one of the missing dimensions in our classrooms. It is now incumbent upon us (as science teachers and student researchers) to explore contexts in loco and generate context-based understandings which can then be adapted to better serve the diverse groups that pass through our classrooms.

In education, the two critical indicators of progress in equity may be enrolment and success rates. Figure 1.1 above indicated that achievements have been made in regards to the former. Whilst overall the enrolment of Black learners is increasing, achievement in examinations is decreasing (McKinney & Soudien, 2010). From his analysis of learner performance at the matric level (high school leaving stage), Sakhela (2015) posits that achievement in matric continues to reflect the racial hierarchy of the apartheid system as most of the top performers are White, followed by Indians, then Coloureds and then finally Africans. The National Department of Education does not publish statistics according to race, in relation to school enrolments for the National Senior Certificate (NSC). According to Sakhela (2015), silence on this aspect is disconcerting as it has far-reaching consequences for the rest of the education system. From his observations, school types or models do not necessarily predict or guarantee performance. He notes that in many former Model C and private schools, results are still skewed against the Black learners. This, he argues does not in any way imply that there are no Black learners who achieve at the top, but that their numbers remain miniscule, particularly given that Black learners constitute that majority of matriculants. Thus, while many in South Africa celebrate the growth in the matric pass rate, many academics and educational experts warn against associating this growth in the matric pass rate with a healthy education system (Staff writer, my-broadband, 4 January 2015, online).

However, in the absence of a racially disaggregated analysis, after the encounter with my colleagues I sought for NHS matric life sciences results. It was my view that such context-based results could provide a rough indicator of trends in the performance of Black learners. A tracking of learner performance for three years, 2010, 2011 and 2012 at NHS (figure 1.2-1.4) vividly illustrates the persistence of Black learners' under-achievement in life sciences at school level.

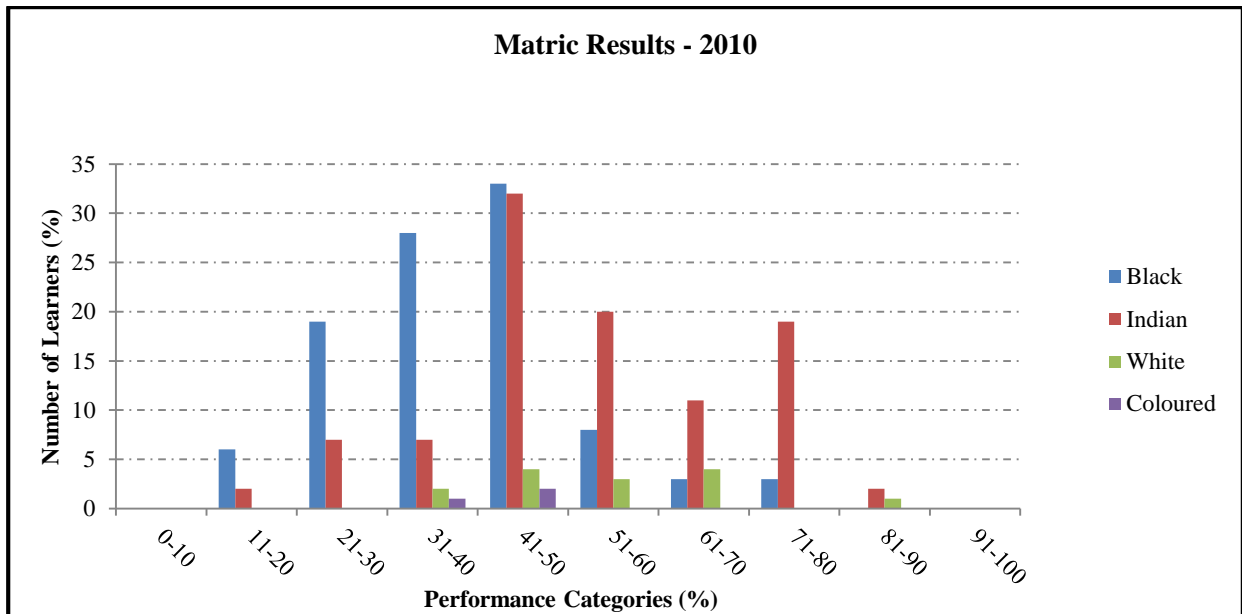


Figure 1.2 Graphs showing learner performance in life sciences by race.

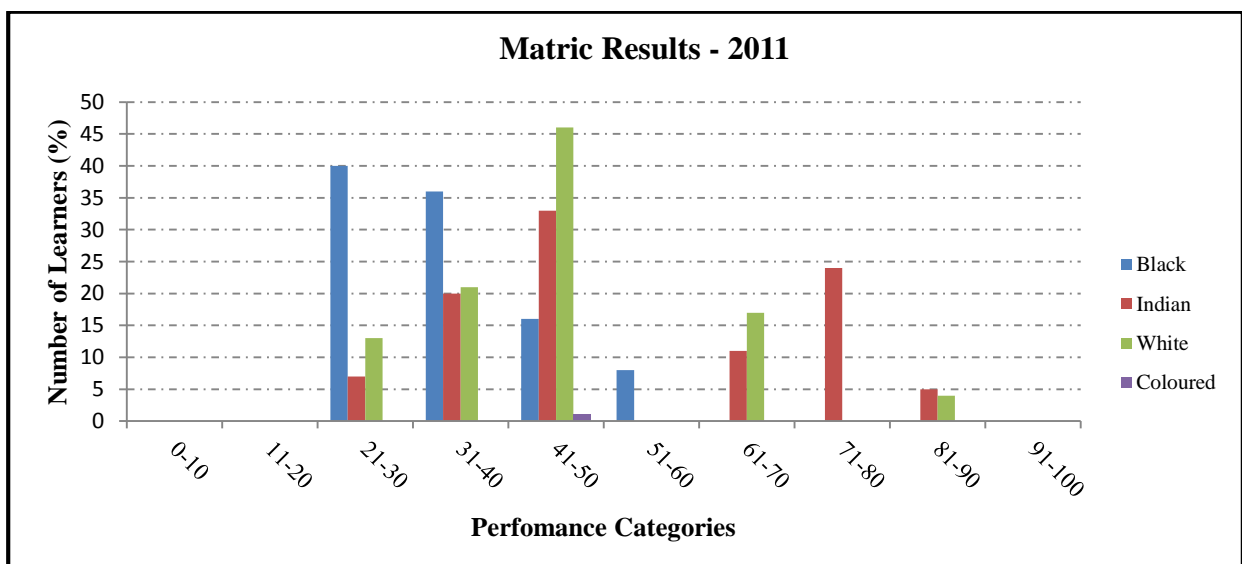


Figure 1.3 Graphs showing learner performance in life sciences by race.

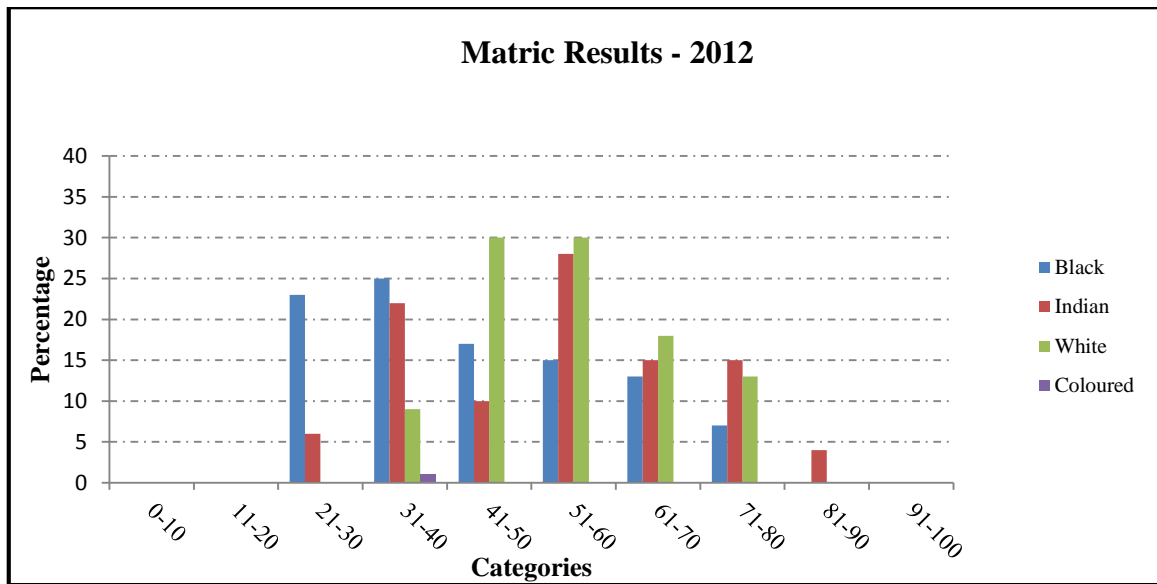


Figure 1.4 Graphs showing learner performance in life sciences by race.

The expectation is that Black learners' achievement in life sciences should be on par with their counterparts of other races. This expectation is based on the fact that schools like NHS boast excellent infrastructure and superior facilities. However, what is certain from these observations is that Black learner performance is nowhere near what it should be. I hasten to point out that these observations do not underplay the huge disparity between Black learners' performance at NHS and their colleagues in township and rural schools as observed by the South African Institute of Race Relations (SAIRR) Report of 2010. The SAIRR report notes that Black learners in mCs outperform their counterparts in township and rural schools. Betram and Hugo (2008) whilst acknowledging the existence of academic performance disparities in South Africa, they attribute differences in learning experience and in learner achievement to a range of things such as: different levels of school resources; the qualifications and commitment of teachers; their pedagogic and content knowledge; the management and organisation of the school; the cultural capital that children bring to the school; teacher expectations of the learners and the way in which instructional time is utilised. The significance of this state of affairs is that it prompts us to pay attention to those learners who are not achieving and to disaggregate their performance by other dimensions of difference, such as culture. I make this point fully aware of other schools of thought that avoid or minimise issues of culture whilst attributing the achievement gap to economic differences alone. While it is true that poverty correlates highly with school failure, studies have repeatedly demonstrated that culture functions independently of economics (Barton, 2004). Research evidence has established that middle and upper-middle class Black learners fall below their low income White and Asian peers on most measures of

academic achievement (Noguera, 2003). It is within this context that we need to look for explanatory frames elsewhere and in this study I explored whether explanations of the achievement gaps at NHS could be understood, interpreted and explained from a cultural perspective. As I pursued this understanding I was reluctant in opting to dismiss life sciences, as a body of knowledge, as irredeemably tarnished by White middle class values. I agreed with Betram and Hugo (2008) that such a stance was tantamount to negating what makes life sciences a form of powerful knowledge that renders niche-specific access to the world. With negation not being an option, the exploration of the puzzling unfolding reality in grade eleven life sciences classrooms at NHS became an imperative. My focus was clear and the questions unambiguous. Could I understand and interpret what had been brought up by my colleagues? It was my view that the endeavour to understand and interpret the puzzling phenomena would yield knowledge about those presumably positioned or had positioned themselves oppositional to positive and productive engagement in this context, so that they could be better served.

1.5 MY POSITIONALITY

A key principle in ethnographic work is that the researcher should reflect on his/her own historicity and prejudice (Myers & Klein, 2011), and how it can possibly affect the study situation and what is encountered in the field. In line with this principle, as part of this focused ethnography, I present my positionality as I undertook this study. As I write about my positionality, I expose and pre-empt the role of my voice and how my bias was included in the study. Other than exposing my bias, my positionality also informed my research approach, the data I collected as well as the relationships I developed with participants in this study. It also had implications for how I approached participants' voice and how I viewed and used research methods, especially those that placed UBY at the centre.

From my religious (Christian) and political (Black Pan-Africanism) upbringing, the message that has been preached to me is, I am my brothers' keeper. I have always been brought up to defend the weak, rout for the hopeless and advocate for those on the margins of society, the ones that society does not expect much from. Having not tasted structural privilege, but socialised in the virtue of hard work and the value of resilience for the good of the collective, I have lived my life through embracing the histories, cultures and epistemologies of those, society side-lines to the margins. As a learner and now as a teacher, I have always stood for the underdog, not for political expediency but motivated by professional commitments and human empathy. Since my political awakening in high school, I have shared a concern with social

theory over some of the basic issues with which it has struggled since the beginning of the nineteenth century. Such issues include the nature of social structure, power, culture and human agency. This study therefore was not only about documenting the nature of a culture in a classroom in a certain school, but was also about accelerating the conscientisation about the marginalised and an exploration and acknowledgement of their agency.

I was born rural, did elementary schooling in urban township schools and completed my high schooling at an elite former Whites only school. I trained as a science teacher in a decolonised African university where seeds of Pan-Africanism and notions of an African renaissance were planted and nurtured. After graduating from university as a science teacher, my first teaching assignment was in a very remote rural community. After serving in this community for five years, I took up a teaching post in a township high school. This was a mega-high school with an enrolment of over two thousand learners and teaching being done in shifts: a morning shift and an afternoon shift. I served in this school for seven years after which I took a teaching post at Northlea High School. From my experiences in all these contexts I hold a view of society as being differentially structured and in conflict between differing interests. I therefore see social structure as fundamental in understanding society. By centering social structure, I am of the notion that life is essentially social. Having risen from more than humble beginnings I regard cognition as essentially a social act. Therefore material conditions exert a significant effect on us. Thus, in my research I look for connections between objective structures and human action. Above all this, I am committed to social change and believe educational research should be emancipatory. From my personal and professional experience I still hold the belief that education remains the only way a Black child can break free from the limits to social mobility inherent in social structure.

At the time of conducting this study I had been part of the NHS community for over six years, as a science teacher. By virtue of this prolonged stay in the community I was going to research, my research approach and methodology had to reject the position that I did not matter. I had to refute the rationalists' claim that I needed to distance myself from the research context, because I could not dissociate from my reality. Wacquant (1989) links this intricate association with the research context with Bourdieu's notion of *habitus* development. Bourdieu posits that when the *habitus* encounters a social world of which it is a product, it finds itself as a fish in water, it does not feel the weight of the water. I was part of the context I was researching and my position and reactivity to it, as suggested by Hammersley (1983) was something I had to cherish, exploit and even celebrate. Like a fish in water I was able to interact with the

participants in ways that were not distant so as to inhibit the generation of deeper insights or too close to sacrifice objective interpretation. As a fish in water I positioned myself in ways that objectified my relation to participants so that emerging findings were not a simple projection of my unconscious relation to the participants. Thus, my positionality embedded within my socio-political *habitus* was intimately tied up with the methodology and methods that I drew on as I explored the puzzling phenomenon.

1.6 RESEARCH QUESTIONS

Choosing to research the context, Urban Black Youth Culture and its intersectionalities with the teaching and learning context of life sciences at NHS invited multiple questions. The following research questions provided a bearing for this journey, but in no way limited the experience.

1.6.1 Critical Research question

How does Urban Black Youth culture influence the teaching and learning of life sciences at Northlea High School?

1.6.2 Research Questions

To address the critical question the following research questions need to be answered:

1. What is the context at NHS in which urban Black youth culture develops?
2. What is the nature of urban Black youth culture, as observed in life sciences classrooms at NHS?
3. How does urban Black youth culture influence the teaching and learning of life sciences in life sciences classrooms at NHS?
4. Why does urban Black youth culture influence the teaching and learning of life sciences in life sciences classrooms at NHS in the way it does?

1.7 DELIMITATION OF CONCEPTS

This section seeks to define some key terms that are important for this study and is not intended to generate generic inferences.

1.7.1 Urban

According to Sealy-Ruiz and Green (2011) the concept urban needs to be understood as a conflated construct that connects geography and dispositions. Heeding the scholars' call, this study conceptualised urban as the geographical space that Black learners occupied, that is, they resided in the city. On the issue of dispositions, Borgman (2013) presents urban youth as different from rural and suburban youth in that urban youth are socially sophisticated at a young age. They have learned to deal with the code of the urban environment and have the experience of navigating systemic urban issues such as technological revolutions, cosmopolitan identities and demanding lifestyles. Thus, UBY were informed by both their location in a particular physical space as well as by their dispositions as cultural beings.

1.7.2 Youth Culture

Youth, as opposed to adolescence, foregrounds age not as a biological trajectory but as identity. Identity in this case is perceived as agentive, flexible and ever-changing (Bucholtz, 2002). Thus, youth culture is the totality of the basic and tacit assumptions held by UBY (Schein, 2004). In this approach, the youth are a specific group comprised of cultural actors who have their own agency and creativity and their "experiences are best understood from their own point of view" (Bucholtz, 2002, p. 533).

1.8 STRUCTURE OF THESIS

Chapter one provided a background to the study. It provided an overview of the historical evolutions of education in South Africa with a specific focus on the status of the Black learner in different epochs. A discussion of the status quo in mCs was provided to scaffold the rationale and was problematised in the problem statement. Research questions informing this research were stated as well as an explanation of some key terms used in the study.

Chapter two examines and discusses some key concepts that undergird this study. This chapter explores culture as the key concept. In chapter two, I centre a new metaphor for culture as porous and pluralisable and reject deficit and hierarchical notions of culture. I also review literature on the advent and inadequacy of multiculturalism. Further review of literature addresses the conflation of culture and pedagogy through an extensive discussion of culture

and science education under the heading *power of culture* and the concept culturally relevant pedagogy (CRP). The last part of this chapter will examine the culture of power. This literature review strives to foreground the indispensability of cultural consideration in the teaching and learning of life sciences whilst placing this study within existing discourse.

Chapter three is the conceptual and analytical framework. In this chapter I present the theory and concepts that undergirded this study through provision of thinking and analytical tools. Thus, this chapter is a mosaic of conceptual and analytical work that framed this research study.

Chapter four is the research methodology. This chapter includes an explanation and rationality of the interpretive research approach. Chapter four gives a detailed outline of the design for the research study including the role of the researcher, the process of data collection, and plans for data analysis. The ethical considerations and the rigour of the research process are also discussed.

Chapter five endeavours to address the first research question: What is the context at Northlea High School in which UBYC develops? In this chapter school and life sciences classrooms' levels of cultural manifestations (Schein, 2004) are presented and discussed. Through a presentation of the artefacts and espoused values of NHS and artefacts, espoused values and basic tacit assumptions of life sciences teachers at NHS this chapter captures and presents the context (both macro and micro) in which UBYC developed. Such a context was characterised by nuanced hierarchisation informed basic assumptions of a superior social identity, uni-linearity of power and other assumptions premised on these two.

Chapter six addresses the second research question: What is the nature of UBYC as observed in life sciences classroom at Northlea High School? Following Schein's analytical frame, this chapter extensively describes and discusses UBYC as interpreted from artefacts and espoused values observed in the two life sciences classrooms at Northlea High School. This chapter also scaffolds UBY voice. From their narratives UBYC basic, tacit and jealously guarded assumptions were gleaned. Such assumptions formed a cultural continuum that extended from assumptions about power, social identity, relationships and academics to more abstract assumptions about nature, reality and time.

Chapter seven addresses the third research question. This chapter presents, explores and discusses the journey that I travelled in the life sciences classrooms at Northlea High school as

a researcher with a specific focus on the pedagogical instrumentalism of UBYC. Using Schein's analytical frame the discussion in this chapter centred on how UBYC impacted teaching and learning. Critical findings were that UBYC contributed to the generation of a conflicted teaching and learning context which limited both opportunities for teaching and learning. What also emerged was that UBY basic assumptions had instrumentality in UBY life in the life sciences classroom, however, this instrumentalism negatively affected and minimised UBY science education.

Chapter eight addresses the fourth and last research question: Why does UBYC influence the teaching and learning in transforming life sciences classrooms in mCs? This is the thesis chapter as the discussion provides an explanatory framework for the critical research question. In this chapter findings are theorised within Bourdieu concepts of *field*, *habitus* and *capital*, Foucault notions of *power*, *the panopticon* and *agonism* as well as Alexander's lay trauma theory. This theorisation is augmented by relevant literature.

Chapter nine concludes the thesis with a reflection on the conclusions and recommendations from the findings. As a coalescence of this thesis I make recommendations for negotiating the cultural terrain for those who at some point may find themselves in the *mix*. I present these recommendation as 'things we need to know', in order to productively engage with UBY. In this chapter I also present a generic model that may be adopted and adapted by anyone interested in educationally serving better those who may be different from them.

1.9 CONCLUSION

The above discussion has sought to highlight the indispensability of cultural consideration in life sciences classes in a new and democratic South Africa. The discussion has presented the status quo through the background, and the problem statement. I have attempted to foreground the need to explore urban Black youth culture as a necessity to steer pedagogy away from the status quo. This study acknowledges the great work that has been done in creating understandings of diversity in this democratic dispensation. However my intention is to extend these understandings by generating a cultural understanding of who UBY are in life sciences classrooms in contexts like NHS. In the following chapter (two) relevant literature will be reviewed, concepts explored and grounded for this research study.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

In chapter one I foregrounded cultural understanding as a prerequisite in understanding what was transpiring in the life sciences classroom at NHS. It was in that notion that I have structured this literature review around four aspects: culture and diversity in the South African context; culture and science education; urban youth culture; and culture and power. The inclusion of the power stems from Schoenmakers' (2012) argument that social systems are power systems, hence power is at the core of all social systems, like the school on a macro-level or the life sciences classroom on a micro-level. Power is thus perceived as an inclusive part of cultural construction and an integral part of social relations, hence any exploration of culture needs to examine it. This intersection of culture and power will be examined under the heading, the culture of power.

2.2 CULTURE, DIVERSITY AND THE SOUTH AFRICAN CONTEXT

In this section I conceptualise culture and expound on its various metaphors in education in general and in science education in particular. I present diverse ways in which culture has been conceptualised and argue for the conceptualisation of culture adopted for this study. I proceed to explore the issue of diversity and progress made in accommodating cultural diversity in desegregated contexts like NHS. I use the term 'desegregation' deliberately because as a process, desegregation was aimed at mechanically establishing physical proximity between groups previously separated (Vandeyar & Killen, 2006). However, in this study my research journey was aimed at exploring the quality of interactions in these contexts and as such questioned the adequacy of desegregation per se. I focus on integration and inclusion as approaches in accommodating diversity in an attempt to assess multicultural education as practised in South Africa.

2.2.1 Defining culture

"Culture is like air; it is everywhere but it is impossible to catch it," (Schoenmakers, 2012 p.4). This characterisation of culture arises from the myriad ways in which the term culture has been conceptualised and defined across disciplines like cultural studies, anthropology and ethnography. These attempts at defining culture have resulted in many definitions which according to Seiler (2013) has prompted the need for the reconceptualization of the term. The

challenge in conceptualising culture emanates from people's attempts to capture all human attributes under a single term. The difficulty in this endeavour is determining what to include and / or to exclude under the term. The result of attempts to define culture has been multiple definitions which according to Hinkel (1999) are as many as there are fields of inquiry. According to Schoenmakers (2012) many definitions of culture have been made since the first one by Tylor in 1871. Other than the multiplicity of human attributes the difficulty of defining culture also arises from its relationship to civilisation, hence its etymology is inter-twined with humanity's historical development (Williams, 1983). Cognisant of this difficulty in conceptualising culture, Geertz (1973) argues for an interrogation of the concept as it is semiotic and instrumental to how society communicates, expresses itself, is structured, governs relationships and deciphers symbols.

With the multiplicity of ways in which culture has been defined it became necessary to conceptualise it for this study. The etymological development of *culture* from the last quarter of the nineteenth century has followed two paradigms promulgated by two anthropologists, Edward Tylor and Franz Boas, who are now regarded as the founding fathers of modern anthropology. Tylor's work *Primitive Culture* (1871) promoted and formulated a scientific approach to the study of culture from a uni-lineal evolutionistic perspective. Tylor following the work of Bastian based his ideas on Neo-Darwinism and believed in the psychic unity of human kind and proposed that cultural variations were largely due to humanity being at different levels of evolutionary progress towards civilisation. According to Schoenmakers (2012) "culture, taken in its wide ethnographic sense, is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society" (p.39). The contention that rose and persists from Tylor's definition is what constitutes a complex whole.

The work of Boas (1920) in the latter part of the nineteenth century brought about a paradigm shift vis-a-vis culture and cultural development. Boas' (1920) notion is that culture is plural and its development is historical. In his seminal work *The Methods of Ethnology* (1920) Boas looked at culture as a whole but moved further to consider the plurality of cultures with distinct, separate cultural elements which manifest differently. Arguing for cultural relativity and plurality Boas posits:

...the history of human civilisation (culture) does not appear to us as determined entirely by psychological necessity that leads to uniform evolution...We rather see that each cultural group

has its own unique history, dependent partly upon the peculiar inner development of the social group and partly upon the foreign influences to which it has been subjected (Boas, 1920, p. 286).

From the above position Boas (1920) conceptualises culture as habitual manifestations and responses enacted by a group of people. In Boas' view, culture is dynamic, hybridised and cultural understanding comes from an exploration of the environmental, psychological and historical conditions. This idea influenced my research design. Commenting on Boas' ideas, Schoenmakers (2012) posits that Boas' ideas were instrumental in the development of a scientific approach to the study of culture. Boas version of cultural anthropology shunned away from the singular culture of evolutionists like Tylor to cultures that characterise modern anthropological paradigms. The importance of Boas' paradigm is that it allows the critical examination and analysis of different groups' culture like UBYC in a context like NHS. It is in the latter sense that Boas' notions were instrumental in this study. His view provided for the possible existence UBYC. This was a shift in research on UBY especially in South Africa where the significant identity marker has been race and socio-economic status (Jansen, 2004; Meier & Hartell, 2009; Pillay, 2004; Soudien, 2004).

Utilising an understanding of culture from Boas (1920) eliminated the risk of essentialism as culture ceased to exist in coherent and non-contradictory forms. Emphasis in my study of UBYC therefore turned away from culture as an entity, to the cultural capital that each social group like UBY is endowed with from their participation in social spaces as well as from their historicity (Seiler, 2013). Addressing culture within this frame moves away from the dominant way culture has been conceptualised in the works of scholars like Aikenhead (1996, 2000 & 2004), Aikenhead and Jegede (1999), Cobern (1996) and Ogunniyi (1988). Within these scholars work, culture has been rationalised, categorised and labelled in a universalistic manner. It is from their work that there is mention of African culture, Western culture and science culture. Such labelling ignores the multiplicity of worldviews within these blocks. Research conducted on such presumptions regards culture as a bounded and coherent set of beliefs and practices associated with a distinct social world. When applied in the research on Black learners it perpetuates an erroneous assumption that Black learners by virtue of their location in Africa are participants in African culture. This view of culture has been criticised for the manner in which it has essentialised and perpetuated systemic inequity against some marginalised groups (Seiler, 2013). This view of culture, termed the cultural difference tradition by Carlone and Johnson (2012) has come to be associated with several essentialistic

metaphors of culture which include cultural borders, cultural gaps, cultural difference and cultural mis-alignment (Seiler, 2013).

The other limitation in the manner in which culture has been conceptualised in research on Black learners other than essentialism is that it has been materially premised. Even Boas' paradigm has this limitation too. Through being materially-premised culture is defined in terms of overt and materialistic phenomena. When viewed this way, culture becomes an entity that is external to the individual and can be objectively examined. Two challenges emerge from such a view: firstly, culture is made synonymous to enactments and manifested habits. According to Schein (2004) such a premise is problematic because it does not accommodate the stability of culture that enables it to be passed to on new members of the group. Secondly, by being an entity culture tends to exist as a variable outside the individual and can thus be interrogated rationally. According to Sewell (1992) culture is constituted by structures which are more powerful and larger than the individual but not external to the actors but internal to them. Structures here function as parameters that inform and guide social existence. The importance in Sewell's postulate is that it places culture deep within the individual beyond the conscious observable reality. This existence of culture at this level is confirmed by Bourdieu and Passeron (1977) when they posit that the body is synonymously a mnemonic device for cultural structure imprinting. These structures are internalised as dispositions and the individual's agency (which is a source of overt enactments) arises from these deeply entrenched dispositions or *habitus* as he refers to them. As I grappled with developing a conceptual understanding of culture to better understand UBY, I needed a view of culture that delved deeper beyond observed phenomena. Such a construct of culture I found in cultural sociology and organisational culture.

In his work, *The Meanings of Social Life*, Alexander (2003) advocates for *Cultural Sociology* instead of *Sociology of Culture* and locates culture at a deeper level which is invisible and which extends into the horizon of affect and meaning. It is from this proposition that Alexander argues that culture cannot be referred to as the 'culture of' because it is not "a thing but a dimension, not an object to be studied as a dependent variable but a thread that runs through...and can be teased out of every social form" (p.7). Connecting Alexander's view with Sewell's above I conceptualised culture as the constituted internal environment which enables and constrains toward which agents are not instrumental or reflexive. This notion is supported by Alexander (2003) who propounds that human beings are not as rational or sensible as we would like to think, but are largely compelled by the affective which is constituted and

constitutes culture. It was from this understanding that I referred to the culture I intended to study as Urban Black Youth Culture (UBYC) and not the culture of urban Black youth.

Premised on this understanding contrary to the dominant conceptualisation of culture in science classroom, I argued for urban Black youth culture because urban Black youth (UBY) could not have been outside their culture, neither could their culture have been external to them. Culture as a concept is thus an abstraction even though its overt enactments are concrete. It became my view that this was the missing dimension in cultural research in classrooms in South African schools. Research work had largely involved researchers coming into the classroom with purported cultural knowledge with the aim of confirming the existence of such a culture or to establish how the culture related to other cultures. This is evident in the number of studies that focus on cultural misperceptions or how African culture or traditional African beliefs' relate to science culture (Malcolm & Alant, 2004). Having located culture, the second challenge in my conceptualisation of culture was establishing the nature of culture as constituted within this internal environment and how it existed in groupings like UBY, the life sciences classes or NHS as a school. As I tried to establish the form(s) in which culture was constituted in the internal environments of individuals in groups, tenets from organisational culture became a fruitful avenue.

O'Donnell and Boyle (2008) remind us that the concept culture was originally derived from the metaphor of a group or any organisation as something cultivated. Such a metaphor places culture at the centre of any group UBY: the life sciences class and NHS as a school included. It is important to note that group sizes may vary, but what they cultivate is the essence of their existence which remains a consistent attribute. Schein (2004) regards an organisation as a social unit constituted to meet a need or pursue collective goals. By adopting the perspective that the group or the organisation is culture, this study differentiates from dominant multicultural education discourse which regards culture as an organisational variable. A group is described by Schein (2004) as a set of people: who have been together long enough to have shared significant problems; to have had opportunities to solve those problems and to observe the effects of their attempted solutions; and have taken in new members. According to Schein (2004) by being based on group configuration, culture presents different levels of analysis. Specifically for this study I envisioned such levels to range from micro-level, UBY, meso-level, the life sciences classroom and macro-level, NHS. The meso and macro-levels constituted the context in which UBY were located. Conceptualising culture as a multi-level concept opened up interesting possibilities for the exploration and explanation of UBYC. From

an interpretive perspective, this allowed me to conceive the life sciences classroom as a mosaic of groups or cultural quilt that needed to be deciphered and interpreted. In viewing the context organisation in this way I agreed with Demers (2007) that culture ceased to be a piece of the puzzle but became the puzzle that had to be deciphered.

The discussion above has tried to capture my understanding of culture going into this study and as I engaged with it. Usually conceptualisations of ambiguous and difficult concepts like culture culminate with the adoption of a working definition. Following this tradition and from an organisational perspective, I adopted Schein's definition of organisational culture for this study. In his seminal work entitled *Organizational Culture and Leadership*, Schein (2004) offered a definition of culture as:

a pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (p. 17).

For this study culture is thus considered as shared basic or fundamental assumptions of any group. From this understanding this study unlike other studies before it in the life sciences classroom in South Africa sought to establish the basic assumptions held by UBY. The inherent belief in this search was that it was from tacit assumptions that UBY perceptions, values, beliefs, attitudes and inter-personal behaviours could be understood and explained. This view is confirmed by Desson and Clouthier (2010) who contend that organisational culture is the personality of a group that guides and informs all its attributes. Such a conceptualisation of culture extends beyond perceivable artefacts. When culture is conceived in this manner which resonates with Boasian anthropology it becomes an all-embracing concept that includes all social aspects/facts and enactments. Such an orientation covers not only social structure but also power which had not been accommodated by Tylor and evolutionists (Schoenmakers, 2012). It is from this capacity of culture when conceived this way that I realised the possibility of interrogating power in the life sciences classroom. From this understanding of culture I was able to recognise power as an inclusive part of cultural construction of UBYC and an important social relation. The implication of this socio-political connection was that this study like any other sound cultural study had the task of deciphering the fundamental assumptions as well as the artefacts produced through that behaviour through a systematic discussion of power (Schoenmakers, 2012).

As I conclude this section, I reiterate the understanding of culture that informed this study. Firstly, culture was viewed as the totality of fundamental, internally located tacit assumptions. Secondly, culture was seen as a group property which is emergent, pluralisable and porous, hence dynamic. Thirdly, culture was regarded as a human construct that constituted and was constituted by social structure. Fourthly, culture arose when groups responded to challenges presented by their external environment and as they tried to hold their members together. Lastly, culture was conceptualised as transmissible hence could be learnt or taught to new comers. I present more on culture from an organisational perspective in chapter three since it constituted the analytical framework for this study. Having conceptualised and defined culture for this study, the next section reviews literature on culture and race as I try to present culture as an adequate construct to accommodate the social reality I sought to understand and interpret in the life sciences classrooms at NHS.

2.2.2 Re-centring culture and de-centring race

One of the challenges facing social theorists is that of the disruption of traditional social order due to the emergence of new identities (Hall, 1992). According to Hall (1992) the emergence of these new identities are not only fragmenting the individual as a coalesced subject but is also dislocating the foundational and stabilising structures of social arrangements. Such threats of social instability prompt social research to begin to explore other frameworks which can render social stability and promote mutually beneficial social coherence.

In his book, *The Souls of Black Folk*, DuBois (1996) contends that the challenge of centuries is the problem of the colour line, that is, the relation between what he terms darker to the lighter races. From the onset of this discussion it is my view that DuBois' contention has one shortcoming in that it universalised differences and cast them as simply Black and White. According to Lemmer and Badenhorst (1997) people of the same race whether Black or White can have cultural differences and in the same light people of different races can have the same culture. It is from such conclusions that there has been a concerted effort to reject race as a category since there is more genetic variation within racial groups than between them (Klein & Chen, 2001). This notion is further substantiated by Nakkula and Toshalis (2006) who argue that there is no biologically sustainable reason for establishing races as distinct subgroups within the human species. The combined argument from the scholars above is that genetically, human individuals are more similar than different. The implicit argument in the scholars' postulates is that phenotypic variations alone cannot account for human diversity and human

associated phenomena, like what my colleagues were witnessing in the life sciences classrooms. This implicit argument spells the need to categorise not only on the basis of the biological but also the non-biological. This is the shift that I made in this study. It was a shift in understanding not a denial of the essence of physical appearance but rather a move towards a more inclusive categorisation as opposed to one based solely on skin tone. Foregrounding culture in this study therefore set me on a path in which I had to deconstruct race and re-centre culture in the life sciences classroom. Such a stance is supported by Hall (1992) who through the notion of the sociological self contends that identity crises post twentieth century have transcended race-based identity crisis and need to be conceptualised as cultural crisis. Thus, this journey involved confronting and grappling with race but also going beyond it. Such a journey was necessary considering South Africa's racialised past cognisant of which I needed to understand the presented phenomena without negating its historicity. The fact that I was researching UBY in a desegregated former White school, brought to the fore the past, the present and aspirations of the future.

The fact that this study focused on UBY brought to the fore one aspect that has dominated research in South Africa's education post-apartheid, the issue of race. In South Africa the premium placed on race has been high. In educational research the thrust has been on exposing racism and associated '*isms*' in attempts to ameliorate their impact on the education context. Race as a significant marker in desegregated educational settings has been researched and documented in South Africa, (Jansen, 2004; Meier & Hartell, 2009; Moloï & Henning, 2006). Race has been foregrounded as an instrumental variable that needs to be addressed for South Africa to move forward (Meier & Hartell, 2009). Despite the premium placed on race as a research context, other scholars have questioned its adequacy to attend to the pressing challenges facing South Africa's education systems (Soudien, 2004). In his analysis of integration in South African schools, Soudien (2004) contends that no singular construct is capable of "explaining the nature of the South African social formation and the ways in which privilege, power and position are distributed" (p.90). His view is that privileging any one construct underplays the influence of multiple variables in differentiation. Thus, as I undertook this study I resolved to go beyond race and called for a shift in ideas that guided this study through an acceptance of the multiplicity of variables influencing the social reality unfolding in contexts like NHS. For example for UBY they were urban (context); Black (pigmentation) and youth (demographics). Prompted by this view I began to question the adequacy of race-

centred research done in South Africa in presenting the full narrative of what was happening in desegregated classrooms like those at NHS.

Questioning the adequacy of race-based approaches decentred race and devalued the psychology of the Black people as the currency to explain observed phenomena in desegregated contexts. However, my colleagues had brought their issues with Black children and as such I could not completely negate race. For me *Black* as an identity marker to a significant extent implied the eminence of race in their challenge. However, I did not desire to come to a conclusion that what was being experienced in the life sciences classroom was racism. Thus, besides de-centring race, I still needed to accommodate it, hence I had to conceptualise race and culture together. Understanding the link between race and culture became a conceptual imperative for this study because there was a possibility that the tacit assumptions that I sought to decipher could be racialised. Conceptualising race and culture was also politically expedient considering South Africa's past in which race was the centre around which the socio-political revolved. It was clear that my colleagues were specifically having challenges with learners of a certain race. It thus became my view that by foregrounding culture it was to be an overarching concept in which all other issues and concepts, even race could be interrogated. As such I had placed this study in this intersection. My position was premised on Meier and Hartell's (2009) view that there is need to accept the notion that racial differences are cultural and circumstantial and not solely biological. I concurred with Carrim (1998) in his acknowledgement that there has been a negation of culture differences amongst Black people in South Africa due to research overemphasising race. Heeding this acknowledgement this study shifted from the dominant South African discourse that has foregrounded race to foregrounding culture within a specific race group, the UBY. In such a shift I attempted to synergistically connect race to culture, cautious of the risk of minimising the former. Thus, my challenge in this shift became how to subsume race within culture.

There is a large body of research spanning many different traditions that has attempted to make sense of the intersection between culture and race. Most of this work has struggled to make sense of this intersection in ways that have often positioned the underachievement of Black learners as the problem and has sought to both explain its genesis and offer possible solutions (Barton, 2001, Carlone & Johnson, 2012 and Gutiérrez & Rogoff, 2003). Such research findings have been overemphasised in literature. What is problematic, however, in this research work is that it has extensively relied on distal measures of learning and has attempted to merge the two constructs of race and culture as if they are one and the same (Nasir

& Hand, 2006). After observing the fragmentation of approaches in social sciences, Wertsch (1998) called for the unity of disciplines. Instead of creating a mosaic from partial pictures Wertsch (1998) is of the view that a more complete gestalt can be obtained through what he regarded as mediated action. Mediated action refers to a way of existence that straddles a central axis. Parsons (2010) refers to this mediated action as “a way to live in the middle” (p. 71). Refining Wertsch’s work, Parsons (2010) is of the view that complete analysis and understanding of contexts can be attained through an appropriation of constructs from several different disciplines. From such a perspective, Parsons proposes a model that highlights the separateness and connectedness of race and culture.

In highlighting separateness, Parsons (2010) sees race and racism as ingrained in consciousness and endemic in previously racially segregated societies to the extent that it is normalised in socio-political spaces. According to Parsons the socio-political is whatever context in which power and capital function and determine access to resources. Race functions in the socio-political space as a physical attribute that assigns symbolic value to biological markers in service of the socio-political. Through its persistent use race becomes normalised and manifests in myriad ways in the socio-political (Delgado & Stefancic, 2000). Thus, there is an overlap between race and the socio-political.

With regards to culture, Parsons’ model views culture as a complex and dynamic system of meanings enacted within long-standing communities. As illustrated in Parsons’ model below, culture lies at the intersection of long-standing communities and the socio-political.

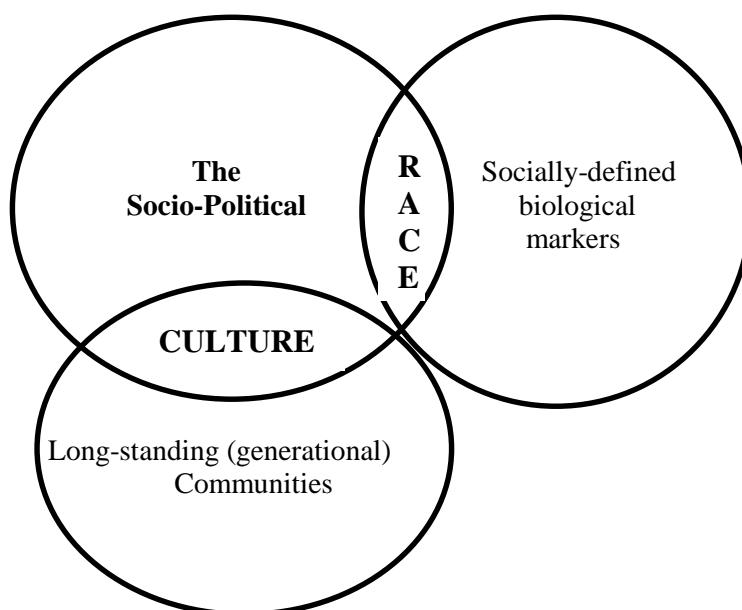


Figure 2.1 *Parsons Model (Adapted from Parsons, 2010, p. 14)*

From Parsons' model it became possible to visualise how race and culture could be conflated as they are all connected to the socio-political. Based on Parsons' model, the school and the life sciences classroom became a socio-political context in which race and culture met. The fact that Parsons' model accommodated and resolved the deficiencies of a fragmented approach enabled me to straddle the middle path and explore the phenomenon observed by my colleagues using a cultural lens with a racialised oversight. Such intersectionality according to Collins (2000) was a fruitful context to explore how these separated dynamic systems mutually constructed each other. Thus, a conflated approach did not only manage to place race within culture in the socio-political but also allowed the examination of the ways multiple variables intersected to produce the phenomenon that was puzzling and challenging in the life sciences classrooms at NHS. Thus, embracing these ideas from literature provided me with a more nuanced and accurate way to consider the experiences of UBY at NHS and simultaneously enabled the exploration of the context that undergirded those experiences. Such a perspective facilitated the systematic disentangling of culture as a more encompassing socio-political construct in life sciences classrooms through a consideration of local processes, wider structural influences, individuals as isolates, as well as part of the collective called UBY.

As I attempted to re-centre culture, it is important to note that I realised that it was not the sole focus on race which was problematic but the myopic consideration of culture also posed some challenge. Sociocultural (or situative) approaches have been used to understand the experiences of UBY in the teaching and learning context in a way that centres culture (Nasir & Hand, 2006). These approaches assume social and cultural processes are central to learning and place socio-cultural action at the core of all that happens in classrooms. From this perspective any attempt at understanding the teaching and learning context only requires a focus on how individuals participate and draw on their cultural toolkit to solve locally situated problems (Rogoff, 1990; Wertsch, 1998). The tragedy associated with these socio-cultural approaches is that they have been observed to skirt the requisite focus on the politics of race and power which are necessary to understand teaching and learning in diverse schools (Ladson-Billings & Tate, 1995). In this study I agreed with Nakkula and Toshalis (2006) that even though race was de-centred, it remained a critical construct. It was my notion that race was not just a socially constructed concept but systematic categorisation that drew distinctions amongst people such that some might benefit at the expense of others. This notion is substantiated by Milner (2007) who posits that inherent in racism are notions of power and privilege, which manifest overtly or covertly. Thus focusing on culture only would have ignored the need for

an analysis of power and of how various cultural practices and discourses were most probably converging in the life sciences classrooms at NHS. However, according to Rodriguez (1999) an understanding of Black peoples' positionality can only be attained when privileges ascribed to White people are understood. With this understanding it became my notion that consideration of race and how it worked with and within culture would be incomplete without a consideration of the concepts *whiteness* and *Blackness*. In the following section I consider these two.

2.2.3 Whiteness and Blackness

On embarking on this journey I was fully conscious of how racism affected Black children in South Africa as observed by Pillay (2004). However, I also concurred with Carrim (1998) in his acknowledgement of the negation of cultural differences amongst Black people in South Africa as research has mostly focused on race. Even though I did not want to attribute what my colleagues were experiencing to racism, the idea of a racialised culture through whiteness and Blackness continued to linger at the back of my mind. The possibility of this idea is confirmed by Guess (2006) who posits that:

The sociology of knowledge must first...concern itself with what people know as reality in their everyday lives. In other words, common-sense knowledge...must be the central focus for the sociology of knowledge. It is precisely this knowledge that constitutes the fabric of meanings (*culture*) without which no society could exist (p. 652)

In my discussion on de-centring race I argued that race was a social and not a biological construct. The question that begged was how could race have become such a powerful force? Fanon (2008) suggested the concept of *racialisation* to explain the power of race. The concept of racialisation, according to Fanon (2008) is based on the idea that the object of the study should not be race itself, but the process by which it becomes meaningful in a particular context. Fanon's notion is that the power of race is not in race per se but in the meanings that are attached to race. Racialisation therefore makes sense of the meanings of race. Garner (2009) rationalises the use of racialisation and contends that racialisation directs our attention to how historically 'un-racialised' groups have become racialised. Based on the idea of racialisation two racial cultures have been identified namely: whiteness and Blackness.

In their book, *Courageous conversations about race!* Singleton and Linton (2006) consider whiteness and term it *whiteism* and present it as lacking the experiences and perspectives of non-White-skinned people. Calmore (2005) regards this type of whiteness as problematical whiteness constituted by tacit assumptions and concomitant attendances

embedded in historic systems of oppression that sustain wealth, power and privilege used to define and underpin a worldview. Whilst there is no consensus on what whiteness is, there is a convergence of notions that whiteness is intimately involved with issues of power and power asymmetry between Black and White people (Nakkula & Toshalis, 2006).

Explaining whiteness' connection with power, Hooks (1992) posits that power through whiteness habitually passes itself off as embodied in the normal as opposed to the superior. Hooks argues that the power of whiteness works in peculiarly seductive ways because it is rooted in common-sense and not in ethnic variations. According to Hooks this power is propagated through socialisation through which whiteness is presented and associated with all that is benign, good and non-threatening. Hooks argument is that the ways in which Black people and Black experience have been positioned and subjected in the dominant regime's representation, is the effect of a conscious exercise of cultural power and normalisation. These normalising regimes have the power to make Black people see and experience themselves as the 'other' due to the normalisation of whiteness. Hooks postulates that normalisation of self-othering is brought by incessant representations of whiteness which impose a subconscious domination of the Black people. The continuous bombardment with representations of whiteness sub-consciously conditions Black people's inner selves to subjective conformation without blatant brute imposition (Hooks, 1992). This subjective conformation is also referred to as self-incarceration by Youdell (2003). The transformative and subjugating power of whiteness representation lies in their capacity to create images that play a crucial role in defining and controlling the capital which individuals can access as well as how they think about themselves (Hooks, 1992). This self-incarceration based on pigmentocracy or as Fanon (2008) terms it, *epidermalisation* generates inferiority in the Black man who ventures into the white world with a collapsed, evaporating self-esteem and devoid of motivation.

What makes whiteness problematic is the observation that White people seldom acknowledge the reality of their skin privilege and tend to dissociate themselves from these privileges even though such dissociation is impossible (Singleton & Linton 2006). Such dissociation is challenging in that it normalises and naturalises whiteness and consequently reinforces asymmetric power relations (Guess, 2006). Through professions of ignorance of white privilege, hierarchy in racial identities is maintained as White people hold onto the notion that their superiority is earned and not an accorded advantage by virtue of their skin tone (Singleton & Linton 2006). Such naturalisation and normalisation of whiteness creates a powerful and pervasive norm which undergirds persisting racial myths and constructs as

observed in desegregated contexts (Meier & Hartell, 2009). According to Singleton and Linton (2006) whiteness as a culture is racially distinct, like all the other cultures, however, it is often re-defined as the mainstream culture, rather than being a separate and equal culture. Furthermore, it is often upheld as the correct culture.

As I consider Blackness at this point, Singleton and Linton (2006), point out that as social constructs, whiteness and Blackness are rarely considered as isolates as they are linked to each other in a constant and ever-evolving conceptual dynamism. This connection is better understood in relation to the Derridian concept of difference (Macleod & Durrheim, 2002). The two scholars postulate that Western metaphysics revolve and are premised on dichotomies: - truth versus error; man versus woman and Black versus white. The scholars hasten to point out that these opposing representations do not stand as equal isolates. Often, the first term is prioritised, present and immediate whilst the second term is subordinated, negative, corrupt and undesirable. It is the scholars' view that these opposing representations create language stability which privileges the absent term (white) and marginalises the present term (Black).

The idea of oppositional representation is extended through the concept of *normalised absence* and *pathologised presence* (Macleod & Durrheim, 2002). It is the Macleod and Durrheim's (2002) conclusion that normalisation and pathologisation has framed notions of oppositional dualities upon which current understandings of Blackness are based. According to Johnson (2003) Blackness has largely been made on a list of oppositional dualities based on racialised narratives entangled in the discourse of otherness. Whiteness, Fanon (2008) posits symbolises justice truth, virginity and encapsulates what it entails to be civilised, modern and human. Under whiteness "the Negro knows nothing of the cost of freedom; when he has fought for liberty and justice...these have always been *white liberty* and *white justice*, that is, values secreted by his master" (p. xiii). Blackness on the other end of the duality "represents the diametrical opposite...it stands for *ugliness, sin, darkness and immorality*" (p. xiii). Perusing Roget's thesaurus, Fanon located more than hundred synonyms for whiteness all with positive connotations whilst his search yielded over hundred synonyms for Black, none with positive connotations. Calmore (2005) provides a list of polar opposites of Black/white terminology which present oppositional images. According to Calmore's list, Whites don't murder, steal, speed or take drugs; they are generous, patient, work hard, are good, are inclusive and reach out to all, are objective, are peaceful, run society and don't have time to complain or fight injustice, are realistic, are orderly, safe, authentic, honest succeed on their own and are moral. To cap it, Whites are heterogeneous; appear mixed or different. In comparison Blacks do all

the vices, want more than their fair share, are lazy and like to complain, exclusive and self-segregate, they exaggerate, are violent, subordinate, idealistic, rowdy and dangerous, phony and manipulative, need help to succeed, waste time whining instead of productive engagement and all Black people are homogeneous. Such a caricature of Black people had also been noticed by Hooks (1992) who posited that the dominating portrait of Blackness in social sciences had perpetually constructed Blacks as failures who were intellectually deficient and psychologically dangerous and insane. Through such narratives differential valuation has been rendered to whiteness and Blackness in which whiteness has been ascribed significance and unearned superiority whilst Blackness has been vilified and marginalised (Calmore, 2005).

Research and analysis of South Africa's response to desegregation shows the dominance of whiteness as the institutional culture (Jansen, 2004). The South African whiteness narrative has been divided into three epochs namely pre-1994; the Mandela era (1994-1999) and post-Mandela era (1999 -), (Makhalemele & Molewa, 2005). During the pre-1994 era whiteness functioned as the driver and mechanism of violence, repression and cultural marginalisation. During the Mandela era "reference to race became sensitive terrain...in an attempt to make a 'rainbow nation'...and give South African a new language for speaking about – and to each other" (Makhalemele & Molewa, 2005, p.1). Post-Mandela South Africa has returned to race and South Africans' worldview is Black and white (Makhalemele & Molewa, 2005). Research (Meier & Hartell, 2009) notes this regression post-1999, and highlights the expectation of Black learners to assimilate when they find themselves in predominantly white schools. Moletsane (1999) confirms the dominance of the perception that whiteness is normal in former mCs. Pillay (2004) researching desegregated Indian schools made similar observations and reaffirmed the notion that whiteness remains the dominant discourse to the extent that it negatively mired the learning experience for Black learners, a context which limited their learning opportunities.

Gleanings from research conducted in desegregated schools indicate that much emphasis has been placed on Blackness, despite the privileging of whiteness over Blackness in the research process. Perusing research I observed that in this research, effort has been made to annotate the experiences of one constituency over another and from that inferred the prevalence of whiteness (Enock, 2007; Meier & Hartell, 2009; Makoe, 2009; Pather, 2005; Vandeyar, 2003). What this research has effectively done is to dissect and dichotomise colour experiences and unintentionally normalised the pathologised present. For example in some of this work the focus has been on how mCs were coping with integration which implied that the coming in of

Black learners into mCs was a burden (Alexander, 2011). I agree with Macleod and Durrheim (2002) that by focusing only on Blacks, white has to a large extent been cast as a silent signifier. The tragic unintended consequence of this approach is that Black learners have continuously materialised as the pathologised presence – though they are a biological variant like White people. In this portrait Black learners have been presented as the repository of representations best captured in frameworks of problematised phenomena. Could this be what was unfolding in life sciences at NHS? Although significant work has been done in trying to understand the whole experience of desegregation in South Africa, in this study I concurred with O'Connor, Lewis and Mueller (2007) that there is still much work to be done in capturing the meaning and consequences of diversity for educational experiences and outcomes. There is a need to extend what we know and how we know it as far as Black learners are concerned. This need is grounded in the reality that Milner (2007) convincingly explains as: Black people are not white people with pigmented skin but rather a unique group with distinct experiences shaped by their racial, ethnic and cultural heritage. The call implied in Milner's explanation is that there is an on-going need to create and develop alternative spaces to explore the Black experience in varied contexts to more fully capture and represent the lived experiences of the Black people here represented by UBY.

With the above understanding of culture, in the following section I discuss why culture matters and why I decided to foreground it for this study. I discuss these aspects under the theme – the power of culture.

2.2.4 The power of culture

In the preamble of his work on organisational culture, Schein (2004) opines that culture, as an all-embracing concept, is an abstraction, yet the forces that are created in social and organisational situations (of which the life sciences classroom is one) that derive from culture need to be reckoned, lest we become victims to them. Focusing on teachers, Schein (2004) posits that culture is instrumental in explaining the intriguing mysterious phenomena in our classrooms when all our material conditions are constant. Thus, his argument is that if we understand culture we will be less likely to be puzzled, irritated and anxious as culture points us to the root of the phenomenon which is below the artefacts that we may be finding unsettling. Research indicates a clear and explicit link between cultural understanding and organisational performance (O'Donnell & Boyle, 2008). A crucial point in this regard is noted by Zalami (2005) who notes that culture can either facilitate or inhibit organisational functionality,

depending on whether or not the existing culture is aligned with the goals of the enterprise. This is also highlighted by O'Donnell and Boyle (2008) who see culture as critical in facilitating innovative initiatives and providing a supporting environment. It is from this understanding that I sought to do a cultural exploration of what was being experienced by my colleagues in their life sciences classrooms. In exploring UBYC and how it influenced the teaching and learning of life sciences at NHS, I was of the view that the limited impact of integration in South Africa as observed by Vandeyar and Killen (2006) could be attributed to the failure to realise the power of culture. Thus, as I advocated for a cultural approach and tried to conceptualise UBYC, I was aware of the need to create a full appreciation and understanding of UBYC. According to Schein (2004) the bottom line for leaders (teachers included) is that if they do not become conscious of the cultures in which they are embedded, those cultures will manage them. Were my colleagues being managed by cultures they were oblivious of? An exploration of culture in the life sciences classrooms thus became an imperative.

Whilst contending with cultural considerations in education, Gay (2010) is of the notion that culture is at the core of all that we do in the name of education, whether it is curriculum, instruction or administration. This fact had previously been argued for by Spindler (1994) who presented the classroom as a cultural mosaic with teachers and learners being active cultural agents. The latter scholars posit that, together, learners and teachers subconsciously construct an environment of meanings enacted in individual and group behaviours which largely influences all that happens in the classroom. Thus, even without due conscious recognition, culture ends up dictating accommodation, beliefs and enactments which, in turn, affect the pedagogic setting. This amalgam of education and culture is best captured by Erickson (1990) who points out that everything in education relates to culture – culture is in us and all around us. Cognisant of this intricate interplay some scholars have begun to call for constant cultural examination of socio-political processes like education to facilitate our understanding of them, hence facilitate the effective management of such processes (Young, Adler & Shadiow, 2006).

One of the shortcomings in science education research has been the singular consideration of demographic attributes and how they impact on science education (Johnson, Brown, Carlone & Cuevas, 2011). These scholars contend that focusing on demographic attributes like ethnicity, social status and race, ignores the coalesced nature of social reality. Singular considerations go awry because they regard all other attributes other than the one foregrounded as additives (Cushner, McClelland & Safford, 2000). Cognisant of the incapacity of singular attributes to explain or interrogate observed science classroom phenomena, Johnson

et al., (2011) urge science researchers and teachers to moot ways of coalescing various attributes in teaching and learning contexts. Heeding this call, Collins (2000) presents culture as a potent all-encompassing construct within which all attributes are accommodated. As a construct of intersectionality, culture is presented as one way in which scholars have attempted to bring the idea of multiple levels of analysis to life in science education research (Nasir & Hand, 2006). Through turning to the power of culture, researchers postulate that by virtue of being constituted by myriad sources of experiences, culture serves as a more adequate construct since it references how singular attributes contribute to observed phenomena. The power of culture therefore lies in it being a construct of intersectionality which helps us understand all the various dimensions of reality, the meanings associated with each of these dimensions and how they interplay (Johnson et al., 2011). The inherent power of culture in science education is in it being a more nuanced way to consider and explore learner experiences and, if needs be, infer tacit institutional assumptions shaping their experiences. In this regard culture becomes a powerful emerging and dynamic construct useful in understanding people and their actions (Nasir & Hand, 2006). Such perspectives presented a possibility of reconceptualising the dynamics in life sciences classrooms at NHS as cultural communities built up over the histories of participants and their immediate interaction in the life sciences classroom.

The power of culture also lies in its convergence with identity. Adoption and utilisation of the concept culture thus in another way made this study an identity study. In this study my understanding of identity is informed by post-structuralists who conceptualise identity as unfixed, dependent upon context, and situated within discourse (Brotman, Mensah & Lesko, 2010). In line with metaphor of culture adopted in this study, this post-structuralist perspective of identity views identity as shifting and pluralisable and renders agency to individuals as they can position themselves within different discourses. The advantage of such a conceptualisation is that it opens up the possibility for sciences classrooms to facilitate the authoring of alternative identities by emphasising different discourses which may be a deviation from the dominant discourses that have constrained or promoted other identities (Brotman et al., 2010). As pointed out by Kane (2012) children's engagements in school are related to who they think they are, what they think they can do, and who they want to become. Thus in trying to describe UBYC by implication I endeavoured to relate UBY understanding of themselves in relation to their figured world in grade eleven life sciences classrooms in a school like NHS.

Identity has been invoked by a number of researchers in science education who are interested with underrepresentation in science (Brickhouse, Lowery & Schultz, 2000; Carlone

& Johnson, 2012; Rahm, 2007). The call made in this literature is for the mining of deeper rooted ideas embossed in culture to understand classroom identities. Such a call places culture at the centre of identity studies and makes culture studies, identity studies. Such identity studies are now largely described as “ethnography of personhood” (Johnson, et al., 2010, p. 344). In these studies identity unsurprisingly, like culture, has been instrumental in generating understanding of the complex ways in which schooling in general, and science in particular, has constituted learners (Kane, 2012). Cognisant of such works, this study sought to explore how UBYC or the processes of UBY social identification at NHS overlapped with academic learning (life sciences learning) and how they constituted each other to produce the reality that was unfolding in my colleagues’ classrooms. Research in South Africa has skirted around this aspect and that which has invoked culture has employed the discontinuous view of culture and focused on artefacts. For example, Vandeyar and Killen (2006) explored teacher-learner interactions in a primary school and did not proceed to explore how the interactions constituted and were constituted by the Black learners in this context. Swartz’s (2009) study focused on the moral ecology of township youths and explored how Black youth in South Africa formed their moral values. There is little evidence of studies in South Africa aimed at exploring the nature of UBYC, how UBYC has been constituted and has constituted the life sciences teaching and learning context. The above situation made cultural exploration of the life sciences classrooms an imperative.

The power of culture has been confirmed in culture being drawn into reform initiatives. Researchers agree that a culture conscious approach in science instruction is a crucial component in the struggle to reform science education in this era of globalisation and in the light of promoting the academic success of formerly marginalised groups (Gay, 2010; Goldston & Nichols, 2009; Lee, 2003). The consideration of culture is believed to create pedagogic understanding that enables teachers to forge genuine partnerships and informed alliances with their learners (Van Wyk, 2002). This belief has necessitated a call being made for science teachers to embrace the need for cultural explorations in their contexts, thus actively contributing towards circumventing the trap of the dominant genre of didacticism in science instruction. According to Van Wyk (2002) this call is based on the belief that curriculum cannot be successfully implemented without acknowledging the learners’ cultural being. Such an approach resonates well with Kane’s (1994) notions of knowing and being.

According to Kane (1994) knowing and being are intimately inter-twined with knowledge being embedded in and created by a constellation of human experiences. This seems

to be the missing dimension in South African science education that has sought to explore desegregated contexts. Research in desegregated contexts in South Africa seems to have largely been pre-occupied with annotating the experiences of the participants and evaluating how successful the integration experiment has been without exploring the learners' *being* within these contexts as observed in the works of Vandeyar (2006) and Alexander, (2011). However, in this study, I acknowledged the intricate intertwining of knowing and being with a subjective critical twist. It was my view that research in the science classroom needed to proceed beyond the knowledge of Black learners to a dimension that explored the essence of their being which I regarded as their culture. I heeded the call by the scholars like Kane in recognising and accepting that research needed to address all facets of the being and all our explanations of what may be puzzling, had to consider all facets of the being. It was my view that such an approach was to be an effective tool in handling the seemingly complex reality brought up by my colleagues. My view was embedded within Emdin's (2010) notion that culture is critical in breaking up contradictory discourses that structure conversations and dilemmas of what is relevant and appropriate.

Responding to research evidence on the power and indispensability of cultural considerations in pedagogic settings I sought to do two things through this study. Firstly, I wanted to establish the nature of UBYC as observed in mCs like NHS. Secondly, I needed to explore its influence in the life sciences context. I agreed with Hooks (1992) that in cosmopolitan contexts like my colleagues' was where pedagogy was, and that's where learning was. While the larger societal issues of economic inequity went beyond the scope of this exploration, I was of the view that this work would push back the tide of inequality and inequity in science education through focusing on the puzzling phenomenon my colleagues were witnessing by explaining UBYC in the life sciences in contexts like NHS. Following the cutting edge of contemporary science education research, I also placed this research within the ambits of the social. This shift emanated from the need to provide an alternative explanatory framework for observed classroom phenomena. Coming up with an alternative framework, Lovat (2003), calls for research to disrupt long-established explanations for classroom phenomena. In this study, I wanted to go beyond socio-economic and race-based explanations, hence I re-centred culture. It was my view that the resulting knowledge from such an approach had the potential of generating an essential blend of knowledge and skills needed to reach and make life sciences content available to all learners and overcome pedagogical challenges created by diversity as well as harness the opportunities that come with it as aspired for by the

current South Africa life sciences curriculum. Whilst the power of culture has been discussed, the question that needs to be asked at this juncture is how has South Africa been dealing with issues of diversity?

2.2.5 Diversity in the South African context

South Africa has been called the rainbow nation due the diversity of its citizenry and cultures. In this part of this section I explore the issue of diversity and how South Africa has conceptualised and responded to diversity. An exploration of diversity is invaluable because cultural diversity influences the context within which schooling takes place, particularly for this study, the manner in which life sciences was dispensed, the crux of the interactions observed and their interpretation. In this part of the literature review, I also interrogate the adequacy of multicultural education as practised in accommodating diversity in South Africa's desegregated contexts. As I examined the concept diversity, my view was that the way diversity was conceptualised, governed the way it was approached and addressed. Failure to conceptualise diversity has been observed to have negative implications for learner involvement and educational interactions (Banks & Banks, 2009). With such a backdrop I could not shy away from inferring that the challenges presented by my colleagues may have been to some extent linked to flawed understandings of UBY and UBYC, hence they did not know how to accommodate it in their practices.

According to the Concise Oxford Dictionary (1983) the word *diversity* originates from the Latin term *diversus* which means more than one, of a different kind, or variety. When conceptualised as a noun diversity therefore refers to a condition having or composed of different elements. Specifically focusing on humanity, Buonocore (2012, p. 4) splits diversity into two categories, that is, individual differences and social differences and defines diversity as “individual differences (for example: personality, learning styles, and life experiences) and group/social differences (for example: race/ethnicity, class, gender, sexual orientation, country of origin, and ability as well cultural, political, religious and other affiliations)”. Individual differences constitute surface level diversity (Klein & Wang, 2010). The group and social differences constitute the deep level diversity characterised by heterogeneity in underlying psychological characteristics. What is critical to point out at this juncture is that although diversity encompasses difference, it does not necessarily emphasise difference, which is the reason why Banks (2004) posits the possibility of educational institutions engendering common identities that accommodate diversity whilst concurrently promoting self-

determination. Based on the definitions above, I conceptualised diversity as multiple realities perceived or existent in humankind. My conceptualisation did not restrict diversity to socially constructed labels but extended beyond that and allowed diversity to function as a broader and more inclusive term.

In education, diversity has been divided into three components or dimensions: structural diversity; interactional diversity; and classroom diversity (Buonocore, 2012). Structural diversity represents the numerical or demographic composition of the learners. Interactional diversity refers to the extent to which learners from different racial and ethnic backgrounds actually come into contact and interact in educationally purposeful ways. Lastly, classroom diversity considers diversity-related initiatives in the curriculum. It is a measure of the degree to which human and cultural diversity is represented in the curriculum, hence ramifies into multicultural education (Buonocore, 2012). What is important with Buonocore's ideas is that they accommodate institutional characteristics as well as learner-to-learner interactions with the underlying presumption that a synergy of all the dimensions is critical for effective pedagogy. Of relevance for this study was the realisation that the quest to understand UBY and UBYC needed to proceed along those three dimensions. I needed to consider the structural, interactional and classroom dimensions to fully comprehend UBYC and how these dimensions coalesced in the production and reproduction of UBYC. This had direct implications for my research design. But how has diversity been conceptualised in South Africa?

A review of research on desegregated schooling in the South African context indicates that much emphasis has been put on the surface level elements of diversity which are largely phenotypic. Much of the work in desegregated schools has foregrounded race and it can be inferred that racial difference has become a proxy for diversity (Alexander, 2011; Enock, 2007; Meier & Hartell, 2009; Vandayer, 2003). Much of this scholarship has focussed on the impact of racial integration measured ironically through the challenges and experiences of those whose spaces have been invaded as a result of desegregation. Such work has largely solicited the experiences of White and Indian teachers with Black learners in desegregated schools or in racially mixed classes. This scholarly work seems to have fallen short in considering the complexity of diversity and its influences beyond the surface level. Emphasis on race, and it being made synonymous with diversity, emanates from the role that race has played in systems of group identities during colonial, apartheid and post-apartheid eras (Meier & Hartell, 2009). Race, as a signifier, has had (and continues to have) particular pertinence in South Africa. The

continuation of race being a significant demographic attribute has perpetuated its pervasive notions and made it a significant if not the only indicator and embodiment of diversity.

What seems neglected in South Africa's educational research endeavours is an interrogation of the deeper levels of diversity, those which capture the essence of variants of humanity beneath the surface elements. What I contended for in this study was that race was not an all-encompassing attribute upon which discourse in desegregated life sciences classrooms could be explained, neither could I embrace race as diversity. According to Soudien (2004) the resolution of the travesty of apartheid and the pathology of colonialism requires working beyond race. Thus, the way diversity has been conceptualised in principle and practices in South Africa makes the attainment of unity in diversity a mirage. In undertaking this study I questioned the adequacy of the way that diversity had been conceptualised particularly in educational research in South Africa. The indictment of such work being that it seemed to suffer from vestigial insularity and the reductionism of apartheid. The research imperative therefore was to move away from this discourse in which race was synonymous with diversity. The need to go beyond such a narrow conceptualisation was borne out of the aspiration to rupture limitations sustained by such a narrow conceptualisation of diversity. According to Makhalemele and Molewa (2005) schools are historical artefacts and at the same time are agents of change. As such schools are at the cutting edge of transformation and are entrusted with the responsibility to build an equal and democratic society from a history of exclusivist ethos. Several theories or strategies have been advanced to give typologies of different approaches to diversity in schools. These typologies include: insular cultural pluralism; cultural assimilation; modified cultural pluralism (multiculturalism), and anti-racism (Dawson, 2003).

According to Dawson (2003) insular cultural pluralism refers to the appreciation and encouragement of diversity while maintaining group boundaries. This typology is established and maintained through geographical isolation. A glance at South Africa's history brings to light this typology and its entrenchment in apartheid. This institutionalisation of discriminatory practices and inequality between groups through legislation was not a bolt from the blue but was based on a trail of practices pre-apartheid that were meant to separate people not only along race but also on class lines (Terreblanche, 2002). The National Party passed several laws that established and maintained segregation. The *Population Registration Act of 1950* classified South Africa's citizenry in terms of race at birth. The *Group Areas Act of 1950* racially divided residential areas and the *Separate Amenities Act of 1953* racially segregated public amenities.

In 1953 the *Bantu Education Act* increased the existing gap in education provided for white and Black South Africans through the creation of separate departments of education. There was measured improvement to Black education in 1984 when the *National Policy for General Affairs Act* gave the minister of national education more power, however, the insulated divide remained (Kallaway, 2002).

Cultural assimilation refers to the philosophy that schools expect diverse cultural minority groups to assimilate the existing cultural attributes of the culturally dominant group (Dawson, 2003). In line with this philosophy, failure to conform to the dominant culture attracts sanctions from the cultural majority which often involves the ridicule and trivialisation of their artefacts and beliefs (Dawson, 2003). Other scholars regard assimilation as a form of conservative multiculturalism in which whiteness is the normalised absence by which other ethnicities are judged (Perry, 2002). Assimilation as a strategy has been credited with the capacity to allow diverse groups to be in each other's presence but still allow them to remain distinct and separate with very little change in the behaviour of the dominant group and minimum inter-group contact (Carrim & Mkwanazi, 1993). In such culturally constraining environments, the subordinate group allegedly internalises prescribed norms in ways that regulate their identities and eventually become constituted by and dependent on the disciplinary power they have directed on themselves (Fenwick, 2003). This occurs because individuals under perpetual surveillance of normalising practices begin to monitor and regulate their own behaviour to conform to pre-established standards (Muthukrishna, Ramsuran, Pennefather, Naidoo & Jugmohan, 2008). In such contexts the notions of freedom and choice are illusions as the sole purpose of rules is to make the subordinate group display its subjection so that the dominant group is validated and legitimised (Fenwick, 2003). According to Fenwick (2003) even though individuals exist and are positioned in a variety of discourses, they are expected to construct themselves in a manner that fits the dominant cultural cast. Thus, assimilation as an approach to diversity manages to bridge separation in space, but still fails to accommodate cultural diversity through respect for cultural identities and self-determination.

With an appreciation and acknowledgement of cultural diversity, Dawson (2003) identifies the third typology and refers to it as modified cultural pluralism or multiculturalism. Under this typology ethnic diversity is regarded as a positive element that elevates a nation and enables citizens to resolve personal and public problems through provision of opportunities for other cultures to be experienced (Banks, 1993). The implicit belief in this typology is that inequities, especially in schooling can be addressed through deliberate accommodation of the

range of experiences, histories and cultures that learners bring to the classroom (Gay, 2010). Through an analysis of the way scholars and educators have thought about multicultural education, Banks (1993) came up with five tenets of multicultural education namely: content integration; knowledge construction; prejudice reduction; equity pedagogy; and empowerment of school culture. According to Pather (2005) these tenets are based on three fundamental assumptions. The first assumption is that it is socially, politically, educationally and economically expedient to recognise that we live in a diverse society. Secondly, multicultural education is synonymous with effective teaching. Effective teaching in this regard refers to pedagogy that is holistic and addresses the intellectual, emotional and socio-political needs of learners with an emphasis on high expectations, accommodation of individual differences and presentation of all subjects to all learners. The third assumption is that multicultural education is for all learners, as out of necessity all learners are required to function in a diverse global village. Thus, multicultural education exposes all learners to the same educational experiences that equip them with the necessary competencies for doing so.

The last typology identified by Dawson is the anti-racism paradigm. Singleton and Linton (2006) argue that in understanding racism and combating racism it is not adequate just to be non-racist, hence the call for an anti-racist paradigm. Anti-racism has been broadly defined by Bonnet (2000) as “forms of thought and/or practice that seek to confront, eradicate and/or ameliorate racism and as ideologies and practices that affirm and seek to enable the equality of races and ethnic groups” (p. 4). Some scholars have gone beyond conceptualising anti-racism as simply the anti-thesis of racism to consider it as the construction of a positive project about a utopian society in which humanity co-exists in harmony and mutual respect (Berman & Paradies, 2010). Thus, anti-racism can be viewed as a conscious and deliberate endeavour at challenging whiteness and its associated power and privilege, and through which people of all races gain the same access and privileges that White people tend to demand, feel entitled to and take for granted (Singleton & Linton, 2006).

South Africa’s approach to diversity has been strongly anchored in integrative multiculturalism (Vally & Dalamba, 1999). The adoption of this approach was done with the anticipation that it would roll back the impact of apartheid-legislated insular cultural pluralism whose hallmark was race-based segregation. I have alluded to the fact that the way diversity is conceptualised largely influences the way it is embraced and addressed. An examination of the policy response to diversity in this democratic dispensation seems to indicate that the construed challenge was racial segregation over other variables. The introduction of the new curriculum

(1997, 2002, 2005 & 2011) and the establishment of bodies like the Race and Values Directorate (2000) by the Department of Education confirm the centrality of an agenda to disrupt separation based on race, believing such would prioritise democratic values. The observable demographic changes in desegregated schools speak to the impact of these overtures and the success of this experiment in disrupting race-based segregation. Studies on actual migration patterns indicate that the strongest movements have occurred from Black to formerly Coloured, Indian and White schools and the population of children classified as African (Black) has become significant in these schools (Sekete, Shilubane & Moila, 2001; Soudien, 2004; Soudien & Sayed, 2004; Vally & Dalamba, 1999). However, Vally and Dalamba (1999) contend that it is not adequate to measure the success of desegregation through demographic transformation without interrogating the quality of the contact. This begs the question: How has integrative multiculturalism been instrumental in accommodating diversity in desegregated contexts in South Africa?

Integrative multiculturalism as an approach to diversity is problematic when its origins and fundamental assumptions are considered. When integration became an educational agenda in the 1960s, it had three core foci. Firstly, it demanded the right to schooling and education for the disabled. Secondly, it advocated the right to education in local, mainstream schools for the disabled and lastly called for a total reorganisation of the special education system (Vislie, 2003). What is problematic in this short trace of the origins of integration is its implication for the South African context. Significantly the history of integration reveals the underlying assumptions concerning certain groups of learners. Its evolution from a parallel system of schooling, that is, general education and special education implies an underlying assumption of inequity between the two systems, hence the need to move from one into another. Thus, moving learners with disability into the mainstream implied moving members of the lesser system (the disabled and challenged) to join the majority and favoured mainstream system. The motivation in bringing in the lesser system into the mainstream was for its members to be normalised and the implicit expectation was that participation of the lesser members into the mainstream would normalise them. The expectation was that the special learners would function in accordance with the normal, that is, standards of the dominant system (Vislie, 2003). Transposing this understanding on *Blackness* and *whiteness* discussed above, it becomes apparent why integration may be problematic in the South African context, given the nuances of its history.

There is overwhelming evidence to substantiate the fact that Black learners were the targets for integration in South Africa. Firstly, the patterns of migration indicate that learners classified as Black are the ones that have been moving into Indian, White and Coloured schools and there has not been any significant reverse migration (Soudien, 2004). Secondly, research findings clearly indicate that the process of desegregation has primarily been a case of assimilating Black learners into these schools and their ethos (Jansen, 2004, Moletsane, 1999). Thirdly, considering the outcomes of the experiment, it has been observed that schools have managed to retain their racial profiles and expect the *newcomers* to conform to established ethos. The dominant sentiment being, “if pupils from other races want to come to our school then they must adjust to the culture and norms of the school” (Soudien, 2004, p. 102). Such ideas expose the deep resentment of the so-called newcomers and Soudien has termed this integration phenomenon as aggressive assimilationism. Encapsulating the situation in desegregated schools post-1994, desegregated South African schools have been labelled assimilationistic (Carrim, 1998; McKinney & Soudien, 2010; Soudien, 2004). Concomitant with integration under assimilation, Black learners are expected to adapt to the dominant nature and curricula of the school. Soudien’s (2009) historical analysis of racial integration in South Africa indicates that integration in this context is characterised by asymmetry in which White, Indian and Coloured learners are positioned in the mainstream as the bearers of preferred knowledge and Black learners by contrast, as the embodiment of all that is inferior. Given such a background, the call to integrate becomes problematic due to the positionality ascribed to all players in this context, based on assumptions of *special* and *normal/ mainstream* that undergird the integration approach. To this effect, Goduka (1999) protests that despite the presence of diverse groups of learners, these previously White, Indian and Coloured schools continue to function as mono-cultural schools. This phenomenon has led Taylor and Mogghadam (1994) to speak of the illusion of contact. In their view in everyday practices and situations, the appearance of integration belies the reality of segregation.

The arguments above draw attention to the fallacy of positive social contact and tenacity of preferential segregation (Durheim, 2005). Through these findings the limitations of integration in the South African context can be argued. These research findings reveal the nature of integration which has been synthesised by Soudien (2004) as uni-linear accommodation of those perceived to be subordinate into the hegemonic socio-political order, at the cost of their ways of being. What can be gleaned from the discussion above is that the desegregation and integration of schools in South Africa has not necessarily led to the inclusion

and acceptance of those formerly marginalised – the Black learners. To compound the issues the curriculum of these schools has remained trapped in the clutches of a history of division and insulated existence, while Black learner experiences in these schools are constituted by teachers who may never have been prepared to deal with diversity (Alexander, 2011). Earlier on having observed such a context Jansen (2004) concluded that democratic education in South Africa still has a long way to go to make the ideals of legislation a reality. Such conclusions seem to confirm Cox's (2002) view that apartheid as a formal model will end, but as a social and mental model will outlive its official demise. The issue of contention then becomes: can integration be the panacea for a once divided people, especially when divisions were propagated on notions of deficiency? Further tracking of integration indicates that the approach is failing to bring about sound social cohesion in diverse contexts (Enock, 2007; McKinney & Soudien, 2010; Meier & Hartell, 2009; Pather, 2005), mainly due to it being premised on notions of difference and deficiency.

With an understanding of the fundamental assumptions of integration, it is unsurprising that research mentioned above presents a picture of limited or minimal changes in the practices and cultures of schools. The contributory factor according to Soudien (2004) is that while the schools may put up a facade of unconditionally embracing all cultures they lack the “analytic sophistication to engage with issues of identity...as such most of their engagement with youth is racial and their approach to race is polemical rather than substantial and interrogative” (p. 102). With their practices anchored in such a facade these schools address learner needs on the basis of essentialised notions and stereotypes or identities that the young people are supposed to take. In light of these arguments integration is vilified for neglecting difference and the consequences can be seen in a number of ways. Makoe (2009) observed that the Black learners continue to be ‘othered’ in post-apartheid schooling system. In addition, escalating inter-racial and inter-cultural conflict in schools has continued to receive growing attention (Enock, 2007). Media coverage of inter-racial conflict and violence in schools has continued to emerge leading to widespread concern over the effectiveness of integration and the success of desegregation for both parents and education authorities. Recently reports emerged of learners being segregated racially with the culpable schools giving a linguistic explanation for it (Mercury, 19 June, 2015). What can be gleaned from these events is that desegregation in schools through integration has not necessarily led to the inclusion and acceptance of those formerly marginalised. Failure of integration through desegregation has led some scholars conclude that

multiculturalism has been policy thus far (Gay, 2010; Jansen, 2004). From this conclusion they contend that unless assimilation is the goal, we have to redesign the way children are taught.

This tragic connection between apartheid and multiculturalism has been articulated by other researchers (McKinney & Soudien, 2010; Mkwanazi & Cross, 1992; Morrow & King, 1998). The dominant argument in these studies is that a negation of difference and refusal to proactively engage with it, serves to reinforce divisions (Morrow & King, 1998). Evaluating schooling in South Africa vis-à-vis engagement with difference, Meier and Hartell (2009) argue that socio-political refusal to address difference in the 1990s has largely contributed to the assimilationistic and contributionist models of multiculturalism. In the latter, lesser groups are appeased through miniscule, superficial infusions of attributes from their culture in diverse contexts. This situation has led Vandeyar (2003) to characterise multicultural education in South Africa as a celebratory mode where a panorama of cultures is put on display without an interrogation of what those expressions of culture embody, as well as the forces involved in the production and reproduction of those culture. The call by Morrow and King (1998) in the light of these shortcomings is that South African society should recognise difference if it intends to realise the ideals of the rainbow nation through a secure framework in which there is provision for the politics of difference. This study heeded this call and through exploring the possibility of the existence of UBYC sought to make a contribution in the evolution of a more secure framework.

Concluding the 2010 Country Report on Multicultural Education in South Africa, McKinney and Soudien (2010) acknowledge the difficulty inherent in integration. According to them the difficulty manifests itself in how Black learners react to a racialised world where the language of *my people* or *my culture* audibly dominates. They argue for an investigation of how this marginalisation – activated by such discourse and enacted in everyday practices, functions in sustaining the persistence of racialised notions and race-based achievement gaps in South Africa. Their argument spells an acknowledgement of the limits of current explanations into why Black learners operate in the manner they do and why they fail to flourish. The report suggests that with much of their past invalidated there is need to establish why Black learners are what they are in learning contexts like the life sciences classrooms at NHS. Acknowledging their argument and heeding their suggestion, it was my opinion that undertaking a study at this level would enable the transcendence of structures of inequality and taken for granted stereotypical notions about UBY.

This is not an outright indictment of integration but rather the realisation of the need to investigate, establish and embrace strategies and approaches that promote inclusion, which I believed was a more relevant descriptor for models for redress and social justice in science education. This entailed looking beyond South Africa's experiences and consciously disregarding the perceived tolerance and harmony among different cultures and unmasking the illusion of contact. Looking beyond integration also implied an interrogation of why our learners in life sciences were different as opposed to the discourse that acknowledges and embraces difference at face value (Meier & Hartell, 2009). My contention was that the poverty of multiculturalism based on integration was its failure to generate contextualised functional knowledge that could facilitate the provisioning of a culturally sound inclusive teaching and learning milieu. This study endeavoured to provide such instrumental knowledge, knowledge that would go beyond knowing UBY through provision of insights into their identity and an understanding their culture. Such an agenda could not be achieved through integration models that assume there is something wrong with UBY and UBYC which needed fixing through their immersion into mCs. My view was that UBY and UBYC needed to be understood as a necessity for inclusion.

The concept inclusion as understood and used in this study, is presented by Dixon (2005) who sees inclusion as concerned with the arrangement of social spaces and opportunities for all learners to explore and develop within these. According to Gale (2001) inherent in the concept inclusion is that by virtue of their culture, ALL learners have a variety of abilities and disabilities. Responsive to this conceptualisation, inclusive classrooms allow all these learners to experience and accept the differences and commonalities that characterise the global village. The responsibility for the creation of inclusive contexts has been devolved to all stakeholders in the education sector in South Africa.

As part of the overview of the Curriculum and Assessment Policy Statements (Life sciences 10-12) the Department of Education articulates that inclusivity has to be the an integral part of resource mobilisation, planning and execution at all levels of curriculum implementation. Implicit in such an all-embracing approach is the notion that the key to attain the elusive reality of inclusion is for all relevant structures within the school community to identify and address barriers in the classroom. On embarking on this study, my conviction was that it was an ethical imperative that we solicit ideas from UBY on what was transpiring within the life sciences context at NHS. Soudien (2001) acknowledges little research work in post-apartheid South Africa focusing on this group particularly how UBY are coping within their

new settings, especially how they are dealing with attempts to have them completely integrated in mCs. Not only does Soudien (2001) point out the scarcity of scholarship, he also argues that there is limited understanding of the complex interplay between schooling and UBY, let alone life sciences in post-apartheid South Africa. This study intended to fill this void. I sought to explore how UBY were coping and experiencing desegregation through considering what they were doing in life sciences and why they were doing what they were doing. This study strove to create an understanding of UBY and UBYC, through the researcher's observations, their teachers' reports and most of all from their own narratives explaining observed rituals in the life sciences classrooms at NHS. This study became a stepping stone in the process of developing inclusive education, especially in light of policy documents not prescribing approaches to achieve transformation. My motivation was to try to name and explain UBYC to overcome what Moodley (2002) has termed the unobtainable dream world in which life sciences education manages to produce literate, creative and critical citizens of all races and abodes. The scope and spirit of this study was different from the mainstream race-based approaches in this area as I took it as a vigilant excavation of an understanding of UBY based on a pluralisable cultural premise rather than on limited notions of race, difference and deficit.

2.3 CULTURE AND SCIENCE EDUCATION

Researchers acknowledge the critical role of the socio-cultural in facilitating the successful negotiation of schooling and learning (Aikenhead, 2006; Emdin, 2010; Jegede, 1996; Keraro, Okere & Anditi, 2013). This study makes a contribution to this growing body of research work by focusing on UBYC in life sciences in a mCs in South Africa. As I write the literature review for this section there are four propositions that I would like to foreground: firstly, an acknowledgement that science is a culture (Aikenhead, 2006); secondly, a recognition that science learning is a culture-making process that engages learners with who they are and where they are going (Barker, 2010); thirdly, an appreciation that all participants in the science classroom are cultural agents (Emdin, 2010); and fourthly, an acceptance that science education is enculturation (Aikenhead, 2000). From these propositions and how I have defined culture for this study I regard science (life sciences in this study) as a set of deeply held tacit assumptions about scientific phenomena. These assumptions are manifest in a distinct belief system, rituals, tools and symbols used by participants in science in their interactions and scientific knowledge production.

I have divided this section into two themes: the concept *culture* in science education; and culture and science education in South Africa. Scanning literature I noticed that there is limited literature on culture and science education in South Africa. However, much work has been done in this area, especially with a specific focus on UBY in the United States of America. It was my view that such literature, though spatially detached from the South African context, could inform this study. My view was premised on the understanding that though UBY in South Africa may have a demographic majority there was possibility that UBYC was not the dominant culture in mCs. Within such a context, UBY in South Africa like their counterparts in the American context, occupied a subordinate position with regards to culture in the science classroom context. Positioned this way by virtue of their culture, UBY in South Africa were a minority and such positionality has been termed minority-majority by Cushner (1992). This positionality has been confirmed by Vandeyar and Killen (2006) who argue that in a free and democratic South Africa teachers still constitute UBY as culturally-deficient, just like their counterparts in the diaspora – hence UBY in South Africa were regarded as a cultural minority.

2.3.1 Concept *culture* in science education

The centrality of science and technology in economic development and competitiveness in a globalised market has science education currency. Not only is science education expected to be instrumental in the accomplishment of the millennial development goals but also to facilitate high levels of scientific literacy necessary to drive the developmental agenda. The bi-pronged agenda for science education has caused a dilemma that has raged for over a century (Aikenhead, 2006). On the one hand there is a socio-cultural vision or what Aikenhead terms a “humanistic-cultural approach” (p.12). Under this vision science learning is about meaning-making within a cultural milieu (Keraro, Okere & Anditi, 2013). A vision which these scholars contend has received limited attention in the context of teaching and learning in Africa. Minimisation of this vision occurs against a background of empirical evidence that suggests that one of the factors militating against learning of science education is negation of culture (Aikenhead, 2006; Aikenhead & Jegede, 1999; Keraro, Okere & Anditi, 2013; Shumba, 1995). On the other side of the raging debate in science education is the traditional vision of science anchored in the rigours of mental regimentation and scientist-centred orientation (Aikenhead, 2006). Under this vision science is presented as a culturally neutral, objective search for the truth (Snively & Corsiglia, 2001). Despite the pre-eminence of the traditional notion of school science the past fifty years have witnessed a resurgence of the culture-based approaches (Jenkins, 2004).

Researching the use of the term culture in the *Journal of Research in Science Teaching*, Seiler (2013) found fifty-two articles in which the term had been used in different ways. She found that in these articles the term culture had a prefixial qualification or an attached label such as *school culture*, *classroom culture*, *teacher culture*, *non-Western culture*, *culture of science*, and *traditional/indigenous culture*. Emerging from the way the term culture has been used indicates that culture is presented as pluralisable and discontinuous. By being pluralisable culture is conceptualised as existing in multiple ways (Sewell, 1992). Discontinuity arises from culture being regarded as distinct, discrete and associated with distinct social worlds. By combining these two metaphors, culture has been conceptualised in these abstracts as coherent and context bound. In this, view culture does not exist on multiple planes neither is there overlapping of the various cultures.

Whilst advocating for a broader conceptualisation of culture, Seiler (2013) argues that the pluralisable and discontinuous view of culture is problematic because it assumes homogeneity of groups and disregards systemic inequity. Assumptions of homogeneity have been implicated in the propagation of labels attached to groups and the sustaining of stereotypes (Sewell, 1999). It is my notion that these are the unintended consequences of such a conceptualisation of culture in science education. Considering the unintended consequences of this view, I agree with Carlone and Johnson (2012) that the mileage from these metaphors of culture is that they have served as a fruitful research avenue and a convenient explanatory model for the under-achievement of Black learners. It is important to note that the metaphor of culture as pluralisable and discontinuous does not only assume homogeneity and coherence but emphasises cultural differences and pits one culture against the other. Due to its emphasis on cultural difference, the concept of culture as pluralisable and discontinuous has been termed the cultural difference tradition (Carlone & Johnson, 2012). The cultural difference tradition and its associated metaphors positions participants in the science classroom in a perpetual state of conflict, a positioning which reinforces metaphors of discontinuity and obscures the tendency for social worlds to overlap and for resources from one world to be useful in another (Barton, 1998).

A review of some work done on culture in education and science education indicates that the cultural difference tradition has had much traction as evidenced by the multiple ways in which the term has been used as observed by Seiler (2013). Three usages of culture are conspicuous under the cultural difference tradition. Firstly, culture is used as a group attribute or variable, hence the label attached in phrases like culture of science, non-Western culture, or

traditional culture. Secondly, external attributes like skin tone, ethnicity or gender are used as cultural referents and culture is used to refer to membership in social groups, for example African culture or Indigenous culture. The last usage of culture under the cultural difference tradition makes no mention of any reference. As I examined literature I came across titles that capture the latter usage, for example: Cultural influence on pupils' understanding of...' or the influence of culture on science learners'.... In this case the target culture is assumed and everyone within the context is regarded as a participant in that culture. What is problematic with the concept whilst premised on the cultural difference tradition is that it casts human experiences as fixed and split from reality external to the participants. This perceived split and discontinuous view of culture thus fuels assumptions about participants in science learning contexts, compromises pedagogical practices, perpetuates inequity and social injustice (Seiler, 2013). The compromise is evident in the several metaphors associated with this tradition. Identified associated metaphors in research include: cultural borders, gaps, mismatch (Aikenhead & Jegede, 1999); cultural conflict (Brown, 2006); culture of poverty (Payne, 2013) and cultural brokerage (McKinley, 2001). Due to cultures being pitted against each other cultural hierarchies emerge and by default the persistence of deficit views of learners' cultural resources in research contexts. This situation has been observed to privilege some cultures and relegate others to insignificance (Carlone & Johnson, 2012).

The cultural difference tradition does not only antagonise cultures but also dictates the positions of the participants in the science classroom (McKinley, 2001). Researchers posit that under the cultural difference tradition, teachers assume the role of culture brokers and view their responsibility as attending to cultural differences (Gutierrez & Rogoff, 2003). In this cultural domain teachers strive to facilitate learners' assimilation into an established world of school science (Emdin, 2010). According to Alexander (2003) the political reality that emerges from this positioning is one that constitutes teachers as power-wielders and learners as powerless. When enacted in the science classroom informed by the cultural difference tradition, teachers structure the science classroom in accordance with an ideology of rule by force (Emdin, 2010). In this position science teachers assume that what is needed in their pedagogical toolkit for culturally diverse contexts is to learn about the learners' cultural artefacts and structure their pedagogy accordingly (McKinley, 2001). This assumption has witnessed large scale innovation initiatives branded as *Culturally Relevant Pedagogy*, *Culturally Responsive Teaching* or *Indigenous Knowledge Systems*. Emphasis in these projects has been the integration of assumed learners cultures and press-fitting them into science education. I

acknowledge and salute the nobility of the initiatives, but I want to point out that the problem with these celebratory and essentialising approaches is that they tend to be reductive and trivialise the multifaceted, dynamic nature of culture as well as its historicity. The gravity of implications of such metaphors of culture is a concern when they inform classroom practice and are enacted in science classrooms. Informed by this tradition teachers see culturally different learners as cut off from important forms of expression and thought. Consequently their teaching fails to respond to these differences as they labour to assimilate the learners into the 'dominant' cultural domain (Seiler, 2013).

It was my view as I undertook this study that the cultural difference tradition by emphasises on cultural borders and mismatches tended to violate the fundamental assumptions or the very culture of science. My understanding of science here is informed by Snively and Corsiglia (2001) who conceptualise it as the rational explanation of the physical world surrounding humans. Even though science is portrayed as neutral and objective, this image has been transforming with an acceptance that science is social and political (Snively & Corsiglia, 2001) an aspect which I foregrounded in my propositions above. The work of Kuhn (2012) supports this view as he argues that science is epistemologically relativistic and dynamic. Kuhn (2012) posits that science progresses through paradigmatic transformations based on the worldview of the scientist. The assumption implied by this view is that science knowledge cannot be separated from the scientist. In this study I agree with Ogawa (1989) in arguing that school science is only one form of science among the sciences of the world. My contention here is not necessarily about the content of science but its context. My view is that science is constituted in dynamism and a cultural difference tradition in science education creates a constraining context for the dynamism of science. The open and culturally conscious thinking encouraged by Kuhn (2012) and the understanding of science espoused by Ogawa (1989) constitutes science as plural and unbounded. The acceptance of science from myriad cultures despite some being trivialised as indigenous and some being elevated to modern confirms the existence of diverse approaches in solving humankind's problems which is the essence of science. The diverse ways in which different peoples scientifically interact and resolve common problems serves to show that human interactions synergistically overlap for the good of humankind. What emerges from this consideration of the dynamic nature of science is that solutions to humankind's problems are multicultural and there is no science that is regarded as infallible, universal and unchangeable. The acceptance of indigenous knowledge systems in mainstream science is testament to this evolved nature of science. The fact that scientific

activity varies in different cultures and historical times and that all cultures have developed sciences to meet their needs, exposes the shortcomings of the cultural difference tradition which emphasises fixed coherence and discrete multiplicity. It is on this point that I want to extend Barton's (2001), and Carlone and Johnson's (2012), argument with regard to the impact of cultural views rooted in difference. In extending these scholars' work, it is my view that the cultural difference tradition does not only lead to a deficit view of learners' cultural resources but also deficit notions of science as a discipline.

From the metaphors of culture highlighted above, Seiler (2013) encourages us to rethink the concept of culture in science education. Whilst advocating alternative metaphors, she argues that denying the meaning and the power inherent in metaphors results in fundamental attributional errors being made in classroom practice. It is her view that equating learner observable enactments to culture ignores other complex socio-political-cum-economic forces that may be working in the context. From Schein's (2004) view such traditions through fundamental attributional errors underplay and minimise the location and depth of culture. Seiler (2013) then postulates that research and innovative overtures associated with the cultural difference are less likely to make significant impact on science classroom practices since they propagate notions of culture as uni-linearly fixed and conflicted. It is her view that borders, gaps and conflicts will persist despite all our efforts because metaphors structure practices and expectations. This situation necessitates an exploration for alternative metaphors and conceptualisation of culture in science education.

Sewell (1999) initiated exploration of alternative metaphors of culture by critiquing the assumption of coherence and pluralisability of culture and questioning the possibility and viability of society structured on such metaphors. The cosmopolitanism that characterise desegregated schools in South Africa also necessitates a response along Sewell's critique. In a globalised context as researchers and practising teachers our response options are limited to developing and devolving alternative frameworks for interrogating and explaining novel phenomena. According to Appiah (2010) the global cosmopolitanism brought about by the boon of technology and democratic reform necessitates the thinking of ideas and institutions that foster peaceful and productive co-existence. Cognisant of this need, scholars like Seiler (2013) and Carlone and Johnson (2012) have proposed a shift in the metaphors of culture that we use in science education and research. They contend that a paradigm shift needs to start from metaphors because they inform the nature of our research focus, research questions and consequently how we structure our practices. According to Seiler, "we define reality in terms

of metaphors, and then act on the basis of those metaphors. We draw inferences, set goals, make commitments, and execute plans at least partly in response to the metaphors we use” (2013, p.108). As I thought of researching culture in life sciences classrooms at NHS I felt that there was a need to interrogate the new reality that my colleagues were experiencing informed by a new metaphor of culture. It was my view that metaphors of gaps, mismatches and borders were not attended to the reality that seemed to be unravelling in the life sciences classrooms at NHS. For a start UBY at NHS were not socio-economically disadvantaged, neither were they coming from the urban environments in which the cultural difference tradition has been a fruitful avenue for research, like the inner cities of American cities and rural environs of Africa. UBY in my colleagues classrooms were children from middle-class families, most of whom lived in the suburbs. Secondly, classrooms contexts at NHS were heterogeneous as opposed to the homogeneous context in which cultural research has been conducted in American schools and African schools. In this regard I agreed with Appiah (2010) that such a context called for a metaphor of culture that would address differences, emergent tensions and allow for the constitution of science classrooms as porous and fluid cultural spaces.

In the last decade there has been a shift from the cultural difference tradition to one that regards culture as an emergent abstract aspect of life that is both produced and reproduced (Sewell, 1999). Based on Sewell’s notion, the works of Barton and Tan (2009), Carlone, Haun-Frank and Webb (2011), Elmesky and Seiler (2007) and Seiler (2013) have embraced this new conception of culture in sciences education and have charted a new metaphor which regards culture as emergent, porous and dynamic. With a new metaphor of culture, the researchers have started constituting the science classroom in new productive ways which include the *third space* or *hybrid space* and *figured worlds*. Barton and Tan (2009) view the classroom as *hybrid space* or *third space* where different cultural capital is exchanged causing an expansion in the official school discourse. Within this view, what transpires in the science classroom is constituted by a coalescing of existing practices with novel ones from other cultural spaces in ways that create new context. Barton (1998) conceptualises this as reflexive science, where the boundaries of science are in constant flux. The science classroom as a *figured world* is a “socially and culturally constructed realm of interpretation” (Seiler, 2013, p. 113). Under this view all participants in the science classroom inclusively co-create the educational context from their cultural resources. According to Dei, James, James-Wilson, Karumanchery and Zine (2000) such a conceptualisation of culture in science education facilitates the devolution of

inclusive curricula based on principles of acceptance and redress of injustice. Based on this view under a new metaphor of culture inclusion, ceases to be a matter of bringing people into what already exists but rather involves the co-evolution of educational space for all participants in a specific context.

In this study I aligned with scholars who are pushing for a new metaphor of culture. It was my view that the emergence of new realities in desegregated science classrooms needed a view of culture that allowed the exploration of emergent phenomena. There was also a need of a new view of culture that allowed the inclusion of out of class variables to be included in the exploration of emergent phenomena whilst accommodating the fluidity of social reality. A new metaphor of culture as emergent, porous and dynamic seemed adequate in addressing the three dimensions. From this metaphor I envisioned classrooms as spaces of cultural production open to the inflow of cultural capital from other agentic sources. This perspective bridged the perceived cultural divide between teachers, learners and science and provided for a holistic exploration of the context. Different from other cultural studies done in science classrooms in South Africa premised on the cultural difference tradition this study was informed by a new metaphor of culture. I embraced Emdin's (2010) view that the science classroom was a space for cultural production and reproduction and not necessarily a terrain constituted by gaps and borders. This view further extended the constructivist agenda in that the learners (UBY in this case) remained the focus of my endeavour but the focus shifted from what they brought from home to what they created in the life sciences classroom as they actively co-created their context. This conceptualisation of culture curbed the essentialisation of UBY, as just Black, but rather enabled me to view them as a separate social entity with its own social identity which needed to be understood not as an isolate as in most cultural studies in Africa. Under a new metaphor UBY became a significant 'other' functionally involved in the creation of a *hybrid space* which was the life sciences classroom at NHS. Through such an understanding I saw the need for a deeper excavation of the fundamental assumptions that informed their ways of knowing and of being in the world at large as well in desegregated life sciences classrooms.

In this literature review I tried to nurture and advance new notions of the concept culture. It was my argument based on the power of metaphors as advanced by Lakoff and Johnson (1980) and as affirmed by scholars like Seiler (2013) and others that addressing emergent phenomena in science classrooms required new metaphors of the concept to guide and inform research. Appositional to this scholarly work, I broke away from the popular definitions of culture and conceptualised it from an organisational perspective. Under this perspective culture

became an abstraction located beyond the domain of the visible attributes but was conceptualised as tacit non-negotiable assumptions. In this appositional state I questioned the wholeness, distinctness, coherence and plurality of culture. I described and discussed how the latter metaphor has buttressed the cultural difference tradition in the science classroom and science education research. I tried to point out the shortcomings of this metaphor as I justified the need to shift to a new metaphor. Going further with this literature review I want to foreground two pertinent understandings of culture informing this study that is: culture is tacit assumptions and; culture is emergent, porous and dynamic. It is from this understanding that I discuss culture and science education in South Africa.

2.3.2 Culture and science education in South Africa

In this section I discuss how culture has been considered in science education in South Africa. I explore literature in terms of how culture has been considered in curriculum planning and implementation.

According to Shizha (2014) South Africa's science curriculum decisions have been a balancing act of politics and economy. Politically, science education is expected to promote democracy, issues of equality, socio-political awareness and redress. Economically it is expected to be instrumental in the skilling of South Africa's citizenry for equitable and competitive economic participation nationally and globally. In light of these competing national needs Shizha (2014) argues that South Africa has experienced a curriculum design dilemma as she tries to address issues of equity while maintaining economic vibrancy. This dilemma is evidenced by the high frequency with which South Africa has been conducting curriculum reform.

The South African science curriculum has undergone multiple revisions driven by the need to address perceived inadequacies. The life sciences curriculum has gone through these reform cycles from Curriculum 2005 (C2005) through the Revised National Curriculum Statement (RNCS), then the National Curriculum Statement (NCS) to the current Curriculum and Assessment Policy Statements (CAPS) (Department of Education, 1997, 2002, 2003, 2011). According to Erduran and Msimanga (2014) C2005 was founded on the principle of Outcomes-Based Education (OBE) with an emphasis on learner-centredness and an explicit valuing of indigenous knowledge systems. These scholars argue that the latest product of curriculum reform, that is, CAPS has moved away from the emphases of the three preceding reform projects. CAPS they posit, emphasises and strives for content mastery. Despite this shift

in emphasis the philosophy and hybrid ideology upon which science education in South Africa is premised has remained unchanged. Erduran and Msimanga (2014) posit that curriculum reform in science education has been characterised by ideological hybridity anchored on a triad of values, that is, academic, utilitarian and the social reconstructionist' purpose of science. This triad of values is captured in the three broad subject-specific aims in life sciences in the CAPS curriculum. These specific aims are: knowing life sciences, which involves knowing, understanding and making meaning of the life sciences content. The second aim is investigating phenomena in life sciences. This aim strives to equip learners with science-based problem-solving skills. The last aim relates to the application of life sciences knowledge to everyday life, as well as understanding the history of scientific discoveries and the relationship between indigenous knowledge and science (DoE, 2011).

The centrality of culture in South Africa's science education can be tracked from Curriculum 2005, through the Revised National Curriculum Statement and the National Curriculum Statement to the current Curriculum and Assessment Policy Statements. The centrality of culture in what South Africa is attempting to achieve through science education is captured in statements which emphasise the need for contextualisation and infusion of indigenous knowledge systems (IKS) such as:

Learners must be exposed to the history of science and indigenous knowledge systems from other times and other cultures...science should therefore be taught in an integrated way in order to both enhance the subject and to clarify the relationship between the subject and society i.e. indigenous knowledge systems that relate to the specific topics, related history of scientific discoveries and the applications of science in everyday life (DoE, CAPS-life sciences, 2011, p. 17).

The obvious implication from the DoE statement is that the socio-cultural is an educational imperative in life sciences classroom in a democratic South Africa. However, researchers in South Africa have observed that emphasis on indigenous knowledge systems has notably waned in the CAPS curriculum (Erduran & Msimanga, 2014; Shizha, 2014). These scholars attribute this diminished emphasis on IKS to curriculum premium being placed on content as South Africa tries to address academic and economic goals of science education. Within this work, indigenous knowledge systems (IKS) is defined as the totality of knowledge and skills held and used by people who identify themselves as indigenous of a place relative to a more recently arrived population which enables them to survive and get the most out of their environment (Odora-Hoppers, 2005).

Despite this subtle emphasis noted by Erduran and Msimanga (2014) it is important to acknowledge that cultural consideration in science education has been made at policy level as gleaned from the CAPS policy statement above. What emerges from the policy documents and the work of scholars above are two aspects. Firstly, cultural integration implied integration of indigenous knowledge systems and secondly integration of IKS in the science curriculum has been aimed at alleviating the plight of the Black learner. My inference on the latter aspect is based on the way IKS, associated science or indigenous science has been defined. Shizha (2014) defines indigenous science as:

Culturally-specific knowledge system that relate to the original peoples of Africa (Black), their oral culture and traditional ecological knowledge, as affected by their worldview; the knowledge that incorporates their social and natural well-being, their cosmos and spiritual world (p, 139).

Implicit in this definition is the belief that integrating indigenous knowledge system in science instruction is equivalent to Black learner cultural consciousness and Black culture accommodation in science education in South Africa. Why focus on the Black learner in science education in South Africa?

Chisholm (2005) posits that South Africa is a country with racialised diverse teaching and learning contexts which is characterised by socio-economic inequality that extends to inequitable access to science, affecting Black learners negatively. This context is not unique to South Africa but is thought applicable to Africa as a whole. There is a strongly held belief that in Africa, schools are sites where Black learners experience the cultural convergence of the African and Western worldviews (Le Grange, 2007). Dominant prevalent notions suggest that when Black learners find themselves in the turbulence of cultural convergence they experience cognitive dissonance which interferes with acquisition of scientific concepts (Jegede, 1999). The experience of Black learners who are tagged as complications and challenges are well documented (Aikenhead, 1996; Jegede, 1996; Ogunniyi, 1988). Such research findings have precipitated what Ogunniyi (1988) refers to as systematised constructivism in science education through which learners' ideas and knowledge as well as socio-cultural factors are stressed in curriculum implementation as a means of bridging perceived disparate scientific worldviews. The integration of indigenous knowledge systems or indigenous science as Shizha (2014), refers to it, can be traced to the work of these scholars. Key findings from their work include the belief that:

Socio-cultural background has a greater effect on learning than subject content; the indigenous worldview inhibits the initial adoption of Western science by learners; indigenous learners are involuntarily selective when making observations in science classrooms; the indigenous learner

might explain natural phenomena in ways that appear as non-rational in the perception of Western science, but the learner experiences no contradictions in his conceptual system; and knowledge learned about school science and through traditional ways is compartmentalised by the learner giving rise to what is referred to as a 'kind of ethnic schizophrenia' (Le Grange, 2007, p. 582).

The contention in these findings is that negation of indigenous science in the science curriculum destroys the critical scaffolding upon which their learning is anchored. Another implication is that due to compartmentalisation of scientific knowledge the possibility of excelling in science exists for indigenous learners despite the resilience of the indigenous knowledge framework. The latter aspect is responsible for the creation of a situation that resulted in Jegede's *collateral learning*. Premised on these emergent notions and findings, extensive research work has been done on the inclusion of indigenous science in the classroom context (Dekkers, 2005; Ogunniyi, 2000, 2004, 2007; Mosimege, 2004). An analysis of abstracts from IKS in science education indicates that research work has proceeded along four lines: it has focused on differences between Black learners and other learners; it has explored misconceptions held by Black learners about scientific phenomena; it has investigated differences in language issues and use of logical connectives; and it has explored worldviews and how they interact with science (Malcolm & Alant, 2004). From this research work it can be inferred that culture accommodation in science education in South Africa has been reduced to the integration of indigenous science in mainstream science curriculum.

In this study I would like to acknowledge as positive the inclusion of IKS in the life sciences curriculum from a socio-political perspective. It is my view that phenomenologically, IKS integration challenges the political hegemony of Western science in terms of how it has been instrumental in subjugating local knowledges. It is a historical fact that science and science education were an integral part of the colonial project. As acknowledged by Bazzul (2015) scientific knowledge played a role in European colonisation through (re)naming of objects and replacement of local knowledges. I concur with Harding (2008) when she urges vigilance amongst science educators for vestigial colonial aspects that may still be prevalent in science education. It is my view that IKS integration in school science is a political issue, a matter of epistemic redress and administration of social justice. I share this view with Le Grange (2007) who acknowledges the positive contribution of IKS integration in science curriculum and sees it as a platform for interrogating interactions between Western and indigenous worldviews. However, Le Grange questions the adequacy of including IKS in fostering science learning which he contends is best served with increased teachers' understanding of worldview interactions, ability to manage classroom discourse and

accommodation of the socio-cultural determinants of science learning. Also on a cautionary note Harding (2008) warns us of lingering colonial vestiges in some science education scholarship that is oriented towards social justice and sustainability. Linking Le Grange and Harding's notions, it is my view that it may be time that we critique and extend the notion of IKS integration in South African science education and explore other frameworks that can name and explain the reality that is unfolding in our classrooms as observed by my colleagues.

Despite integration of IKS, the state of science education in South Africa continues to be a concern for scholars like Le Grange (2007) and Shizha (2014). For example, Le Grange (2007) registers his concern with the small and yet declining number of learners who are passing Grade 12 as well as the dismal performance of South African learners in international surveys. Whilst acknowledging efforts being made in addressing the crisis, he contends that school level interventions have not been fruitful because they have been framed within school effectiveness discourses which negates the socio-cultural. What I find disconcerting, together with Le Grange, is that this crisis continues despite the presence of scholarly work that has shown that culture has great impact on learning. The questions that beg then are: why is there no marked improvement in uptake and performance with the integration of IKS? Is the discretionary inclusion of IKS in CAPS an acknowledgement by policy makers that it is not the panacea or the magic wand for the challenges facing science education in post-apartheid South Africa? Was the introduction of IKS and inclusion of other constructivist artefacts in the science classroom based on a mis-diagnosis of the real problems that militate against Black learners' science learning? Lastly, is the current state of science education in South Africa an indictment of the manner in which we have tried to understand and accommodate the Black learners' experiences in the science classroom? The overarching question from these questions is: do curriculum enrichment strategies like the inclusion of IKS create a science learning context adequate to scaffold UBY in a cosmopolitan South Africa? Questioning the capacity of IKS in embedding science within the reality of UBY puts a spotlight on the work done within this paradigm. With Malcolm and Alant (2004), I query the rigour of such research that has followed Ogunniyi's hypothesis as it seems that the researchers have blindly embraced his ideas and applied them without any critiquing or extension. Querying this work is solicitation of alternative frameworks that can still capture the aspirations of the curriculum that is, centralising the education of the Black learner as a matter of socio-political redress. Such an alternative still has to be mindful of the dynamism and fluidity of human reality and not negating the inherent agency in all humanity.

Heeding Malcolm and Alant's (2004) call in this study I was critical of IKS as the panacea for addressing the challenges and complications that Black learners face in the science classroom in South Africa two decades after the attainment of democracy. Whilst critiquing the worldview research work in South Africa, Malcolm and Alant (2004) made three thought-provoking propositions: learners may belong to the same school, socio-economic class and community but they still make personal choices, with more or less conviction according to their own criteria and purposes at that time of their lives; learners show great pleasure from having their own culture and technologies in the science classroom, and engaged their science learning with interest and enthusiasm when their culture was recognised in the science classroom; and despite traditional beliefs Black learners were keen and succeeded in learning thereby crossing the border with minimum dissonance and discomfort. From these propositions Malcolm and Alant (2004) concluded that:

Alongside the epistemological issues of border crossing are essentially political ones of exclusion and inclusion: learners respond positively to having 'their' lives and cultures admitted to the science classroom, regardless of the judgements they make about the acceptability of various explanations (p. 67).

These scholars' argument seems to suggest that IKS is but one approach by which Black learners experiences in the science classroom can be understood and explained. However, what is unequivocal in their arguments and propositions is the need to centre learner agency and learner culture. What also emerges from their propositions is the attribution of dissonance to context rather than content. The implicit postulation in their work is that Black learners can learn science as long as the context is framed in line with their cultural reality. It is within this context that Malcolm and Alant (2004) contend that complications experienced with Black learners do not emanate from the positivistic nature of science but its exclusionary framing by science teachers through verbosity. From this contention they posit that there is still much work that needs to be done beyond IKS and worldview theories to bring together science and the Black learners in our science education.

It is my view that the framework that has been established at policy level is explicit in this regard as espoused by the three aims of the life sciences curriculum in South Africa. Within this framework learners are expected to know science (science knowledge); do science (science processes) and become culturally-conscious citizens proud of their identity (science/ society). The first hurdle that needs to be tackled in bringing science and Black learners together is the essentialisation of science and its presentation as disparate. Other than Ogunniyi (1988) the disparate view of scientific worldviews has also been picked up by other scholars resulting in

the emergence of associated theories like the ideas of border crossing (Aikenhead, 1996) and collateral learning (Jegede, 1999). These scholars' work has constituted the African (Black) indigenous worldview and Western worldview as distinct, unique and disparate. Adopting a post-modernist, stance Malcolm and Alant (2004) are critical of this epistemic dichotomy of African versus Western that has antagonistically positioned knowledge and not the worldviews upon which it is premised. The scholars are of the view that such a conceptualisation reflects a "superficial understanding of history and fails to recognise the variety and fragmentation in both African and the Western" worldviews hence the project is essentialistic (p. 65). Commenting on this oppositional constitution, Le Grange (2007) posits that worldview theories negate the socio-cultural and overemphasise the cognitive and how it interacts with science learning. Could this be a mis-diagnosis of what needs to be addressed in science education? Could this be the source of the dissonance observed when Black learners interacted with their teachers in life science classrooms at NHS?

The primary source of essentialism and an inherent weakness in the *Mind the Gap* approach based on disparate worldviews is in the description and naming of this knowledge. Many terms have been used to establish what indigenous people know and such include: traditional knowledge, traditional ecological knowledge, local knowledge, indigenous knowledge or science and folk knowledge (Mazzocchi, 2006). According to Mazzocchi (2006) the etymological problem with these terms is that each carries different implications and hence places emphasis on a specific aspect of a particular group of people. The term traditional implies the autochthonic nature and linear transmission of the knowledge within a cultural continuum. The term indigenous implies historical location and a time dimension associated with this knowledge (Odora-Hoppers, 2005). According to Mazzocchi (2006) the term local applies to the geographic context. In the implication of these terms lies their weakness which contributes to essentialism that even extends to science education. When knowledge is termed traditional there is an inherent assumption of epistemic stagnation that ignores the dynamism of groups as they adaptively respond to their changing circumstances. When knowledge is termed indigenous the assumption is that the population is homogenous, epistemologically isolated and knowledge is disparate. Juxtaposing these assumptions on Black learners, a problematic picture arises. By being perceived as traditional, Black learners are presented as trapped in pre-colonial times and are presumed to know and appreciate IKS which may not be the case. By being regarded as indigenous, all Black learners are similar and a one-size-fits-all approach is deemed adequate when dealing with them irrespective of their context, whether

rural or urban. Lastly, by being local, Black learners are perceived as inward looking without a global outlook and extensive understanding. It is from such an analysis that Harding (2008) urges us to be critical of IKS. It is my view that as much as it is important for the science curriculum to have a South African flavour and promote equity there is need for vigilance lest we perpetuate deficit notions and epistemic marginalisation. It is my view in this study that the disparate view unintentionally denigrates and alienates Black learners in science classroom and contributes to further othering. IKS has this unintended effect because when presented together with Western science they are not regarded as equals as aspired for by CAPS curriculum planners. Le Grange (2007) argues that based on the worldview theory Western science is elevated above all other knowledge systems as the **SCIENCE** and the rest as the other science. Pitted this way the sciences are presented as incommensurable and incompatible (Le Grange, 2007). The challenge is how purportedly disparate worldviews may be integrated in the science classroom to better serve the Black learner?

In the preceding parts of this section I mentioned that researchers seem to have reached consensus on the fact that the crisis in science education in South Africa is not about the content but the context. I reiterate this point because it's my view that in it lies the possibility of an integrated science. From the aims of life sciences in South Africa, three aspects of science were identified: knowledge, process and technology (science/ society). Curriculum planners in South Africa are clear that the achievement of science education goals in a globalised context lie in Western science knowledge which they intimate should be presented as one of the many ways of knowing (CAPS, DoE, 2011). Unlike IKS scholars I am not affected by the little inclusion of IKS in the science curriculum for it is confirmation of two realities. First, it confirms the universal nature of scientific knowledge in a globalised cosmopolitan world. With the information explosion and ease of transport and communication the world has become one localised community. This has implications for knowledge production. According to Mazzocchi (2006) the real world has become too complex and closely knit to be reduced to static conceptualisations. In such a world science's tacit assumptions learned by acquiring requisite science concepts are held as knowledge everywhere. Turnbull (2000) refers to this as global theory and is subject to Kuhn's paradigmatic change. For example, in life science learners everywhere need to know the cell theory, genetics, and bio-chemistry and so on. I do not deny that such knowledge has been built from multiple cultures at different times but such is the nature of knowledge. As argued by Le Grange (2007) knowledge is a mosaic assemblage, despite its initial localness the constellation of the various sciences create one organic whole

called science. It is my view that science concepts and principles are universal and all learners irrespective of context have to acquire them. Learners everywhere need to know about HIV/AIDS, pollution, global warming, respiration, genetic engineering and diseases. Such knowledge is critical for humanity's survival and progress. I agree with Le Grange (2007) that such knowledge can be assembled in myriad ways but all contributes to the creation of a single knowledge space called science. This unitary conceptualisation is also captured by Mazzocchi (2006) when he invokes Gadamer's hermeneutical notion of horizon in which a horizon is the all-encompassing view from a strategic position. Mazzocchi's argument is that it is possible to have a unified field as it all depends on one's positioning relative to the field of view. He compares science about the material world to a map and the terrain it describes as he writes: "the map itself is not the terrain, but only a representation of it. Just as different maps can give accounts of the same territory, so too can different forms of knowledge about the material world" (2006, p. 3). Conceptualised this way science knowledge as a representation is not disparate and there is no dichotomy.

Secondly, the disparate view of science can be disrupted when science is considered as a process – as an act of doing science or producing scientific knowledge. Le Grange (2007) contends that the dichotomy in this case or the multiplicity of incompatible sciences can be erased if science is regarded as a process or *performance*. According to Mazzocchi (2006) all cultures do science as they make empirical observations to better understand nature in order to predict and interpret it. This human activity is the origin of the multiplicity of science. For Le Grange (2007) this origin is the umbilical cord that unites all science. These scholars agree that scientific knowledge production in all cultures does not proceed uni-linearly but through rigours of inductive and deductive reasoning rooted sometimes in disparate knowledges. Mazzocchi (2006) gives the example of Western science as being rooted in Greek philosophy and Renaissance. The uniting attribute in science as *performance* is that disparate knowledges work together to produce novel knowledge spaces or interstitial spaces (Le Grange, 2007). Thus by shifting our perspective and looking at science not just as a *representation* but emphasising on it as *performance* provides bridging for the perceived chasm between sciences from different cultures. This notion is critical because it accommodates the notion that science (both as content and process) can be taught to all learners irrespective of their geographic location or ethnicity. This position substantiated my argument that what needed to be carefully considered and explored was the context within which life sciences was framed, and not necessarily the content.

If IKS was integrated into the science curriculum in South Africa because Black learners were thought to be traditional and indigenous, the arguments above present a new dynamic. Malcolm and Alant's (2004) research-based propositions from the South African science classrooms categorically refuted the notion that Black learners (both urban and rural) were as traditional and indigenous as implied by the terms. In pursuance of the third aim of the curriculum which calls for the embedding of the curriculum in learners' lives addressing the emerging dynamic became a research imperative especially in schools like NHS. The NHS context had to be curriculum planners' quagmire: it was demographically heterogeneous, economically affluent, Black learners were not indigenous to the school, learners were exposed to the global trends and the science teachers were White and Indian. Other than understanding and trying to explain the phenomena that my colleagues had brought to my attention, research findings prompted the need to explore other ways to better serve Black learners. In heeding this call I sought to pursue the neglected avenue of the socio-cultural beginning with the question: who were the Black learners? Were they traditional, indigenous, or local? What was the nature of their culture in science classrooms in crucibles like NHS? How was this culture influencing the life sciences teaching and learning context? Lastly, why was the context what it was? This was not an easy journey but a necessary one because complex systems like NHS needed to be understood. Malcolm and Alant (2004) whilst interrogating the research thrust posit that South African schools and classrooms are complex and little is known about what goes on in them. As they concluded their work the two scholars remind us of the absence of a horizon of science education in South Africa due to the limited conceptualisation of learning contexts. They posit that such a context coupled with the complexity of the South African context may seem frustrating but in it is the narrowest of research agendas. This research was placed within this strait.

2.4 CULTURE AND THE SCIENCE TEACHING-LEARNING CONTEXT

As I undertook this study I had the conviction that UBY were like all other learners with regards to their capacity to learn scientific concepts, provided the context was structured cognisant of their culture. This view was based on a notion that I entertained, which was, knowledge is universal but its dissemination is cultural. The missing dimension in life sciences classrooms and maybe the source of the puzzling phenomena could have been the knowledge of UBY culture, and deciphering it became my agenda in this work. I firmly believed that an understanding of UBYC had utility in the creation of learning contexts that would better serve UBY. It was my view that the spin-off from such knowledge would not be confined to UBY

only but was beneficial to all in desegregated classroom because the negativity that my colleagues observed seemed to have ramification beyond UBY. It is from these notions that I discuss culture and its role in teaching and learning contexts.

Teaching and learning take place in a context. This context is described by Leach and Moon (1999) as a pedagogical setting which is “a practice that a teacher, together with a particular group of learners creates, enacts and experiences” (p. 267). This conceptualisation of the teaching and learning context is important as it highlights the interaction of key variables that constitute the educational setting, that is, the teacher, learner and the atmosphere that arises from their agentic enactments. This interplay is the essence of didactics. According to Murphy (1996) didactics is concerned with the relationship between learners, teachers and the discipline as well as all that is involved in changing and restructuring of the pedagogical setting to make content teachable and learnable. The possibility of restructuring the pedagogical setting also implies a consideration of the concept pedagogy. From Murphy’s perspective teaching becomes a triadic relation and tri-polar process involving the source of teaching, the learner and a set of activities and their manipulation to bring about the achievement of objectives by learners as identified by the teacher (Bhomik, Banerjee & Banerjee, 2013).

A traditional definition of pedagogy is given by Watkins and Mortimer (1999) who regards it as “any conscious activity by one person designed to enhance the learning of another” (p. 3). Preferring a more technical and discourse-linked definition, Alexander (2003) views pedagogy as an act of teaching and its attendant discourse. In this regard pedagogy is all that one needs to know and master in order to make and justify decisions for effective teaching identified by the teacher (Bhomik, Banerjee & Banerjee, 2013). Pedagogy is concerned with the here and now of teaching and for this reason it has been considered by Tochon and Munby (1993) as live processing developed in a practical and idiosyncratic situation. Cast in terms of actions that teachers take to advance learner outcomes the above conceptualisation of pedagogy shifts from conceptions of it as *science of teaching* and places it in artistic domain or the realm of praxis (the dialectical relationship between theory and practice in teaching) (Murphy, 1996). Thus, the meaning of pedagogy that I connected to didactics and culture was pedagogy as an art. Viewing pedagogy as an art was significant because it made teaching assume a unique interactive aspect and its knowledge base ambiguous and incomplete yet tacit and still at the core of professional practice (Tochon & Munby, 1993). Describing this new epistemology of practice, Murphy (1996) sees it as competence and artistry already embedded in skilful practice involving “reflection-in-action” (p. 34). In this way pedagogy is poised at tackling and

resolving practical problems inherent in delivering an individualised pedagogy necessary for diverse contexts like life sciences classrooms in mCs.

Conceptualisation of pedagogy has proceeded along two parallel schools of thought, that is, traditionalism and progressivism. Clark (2001) points to this polarised debate and describes the former as representing regimentation and greater, direct instructional rigour and emphasises the necessity for elevated standards. By contrast, those who espouse progressivism emphasise the importance of relating instructional content to learner experiences and knowledge construction through social interaction (Clark, 2001). Progressivists believe learner enquiry and independent knowledge construction is more pertinent to effective learning than rote mastery of facts. The tenets underpinning these ideas are that if teachers are able to make connections between the learners' culture and their practices there is a potential to enhance the academic performance and overall schooling experience of learners from other cultures (Gay, 2010, Ladson-Billings, 1995). Thus, pedagogy situated in such a framework recognises the rich and varied learner cultural wealth, knowledge, and skills and seeks to develop dynamic pedagogy and sound didactics. Teacher practices within this framework become dedicated to nurturing learner academic, social, emotional, political, cultural, psychological and physiological well-being. Garcia (1995) reviewed a number of studies that documented culturally diverse schools with strong academic achievement and found that in these schools, teachers literally had adopted their learners and served as advocates for them. Classrooms in such schools were family-like settings and there was a rejection of notions that anybody within the classroom was disadvantaged.

Researchers like Gay (2010) who have studied teachers who succeed with a range of diverse learners have coined the term *culturally responsive teaching* to describe such teachers' practices. The dominant notion in this type of teaching is that learner culture is the critical ingredient in the teaching and learning context. According to Gay within this context, teaching involves a deliberate stance that attends to cultural differences and involves teachers making a conscious protracted effort to learn their learners' cultures. Whilst other scholars have tried to annotate and give step-by-step prescriptions of teaching practices associated with this context, Gay contends that culturally responsive teaching cannot be summed up by lists. The informing premise that supersedes lists is that teachers only need to be knowledgeable and familiar with learner culture (Gay, 2010). The inherent notion implicit in her argument is that conducive classroom contexts can be nurtured through a deepened understanding of learner cultures. This study is not the first work in which culture has assumed centrality in debates surrounding

relevance, relationships and rigour in learning processes. Early works that advocated for placing culture in the development of viable teaching and learning environments have described this context in a number of ways: culturally appropriate; culturally congruent; mitigating cultural discontinuity; culturally responsive and ; culturally compatible (Gay, 2010). In this study I adopted the term culturally responsive pedagogy (CRP) as put forward by Villegas and Lucas (2002). I was of the view that cultural responsiveness in the pedagogical setting resonated with the way I conceptualised pedagogy. At the core of this phenomenon is the belief that teacher thought and practice has to be constructed in a manner that recognises and respects the intricacies of culture and the differences that come with it, and structure pedagogical practices and ideological stances in ways that are culturally recognisable and socially meaningful (Nasir, 2002). An examination of such works reveal that it is built on at least five principles: the eradication of deficit-based ideologies of marginalised learners; disruption of the euro-centric, middle-class discourse as the normative; the emergence of a critical consciousness and socio-political awareness challenging and disrupting inequity and oppression; an authentic, informed notion of care of the marginalised and the promotion of their well-being; and a recognition of the complexity of culture and its potential in enhancing educational excellence (Howard & Terry, 2011).

Literature makes a link between learner cultural identity, teaching, and learning (Lee, 2007). In this literature the merger of these three is regarded as the panacea for learner apathy in science education through its capacity to create pedagogic settings or contexts that are relevant to and reflective of learner realities (Dunbar, 2009). Research also indicates that when culture is linked to pedagogy it enhances learner self-esteem and supports healthy identity formation (Gay, 2010). What was apparent from my colleagues' experiences was that the identities exhibited by UBY in their classroom were a challenge. Having questioned the capacity of IKS to attend to the realities and aspirations of the democratic South Africa for the Black learner, it seemed timely to consider the viability of UBYC in that regard. Such a position was premised on the notion that science education was a cultural process, the science classroom was a cultural context and schools like NHS were the primary vehicles for cultural transmission. The challenge was how could UBYC be linked to pedagogy when it was not deciphered? How could the science teachers integrate what they didn't know? How could they attend to the realities of UBY whose reality as constituted by their tacit assumptions they did not know? It was my view that the centrality of culture in the learners' being meant that ignorance of their culture was ignorance of what the learners really were which translated into

ignorance of how to relevantly structure the life sciences context for them. We are reminded of the futility of attempts to teach without this cultural knowledge by Wu (1999) who contends that “you can’t teach what you don’t know” (p.539). How could the life sciences context be relevantly structured without knowledge of UBYC and be expected to serve them well? It is on this point that I concurred with Ladson-Billings (1995) that perhaps it was time to insert science education into culture rather than inserting culture into education.

Questions and objections have been raised about the appropriateness of culturally relevant pedagogy. Critics like Ravitch (2003) argue that culturally based teaching approaches lack depth and rigour and deny learners access to core academic skills which are regarded as culturally neutral. The other contention is that this pedagogy seems only suited for Black learners. Responding to this critique, Irvine and Armento (2001) argue that culturally based approaches to pedagogy have been a staple in schools since schooling’s inception, but they have mostly been aligned with only one group of learners and based on one culture – the culture of middle-class, English-speaking White learners. In this study I agreed with Howard and Terry (2011) that the arguments against CRP were based on a simplistic conceptualisation of the context. According to Howard and Terry (2011) CRP is more than just a way of teaching, or a simple set of practices embedded in curriculum lessons and units which may involve spaced out acts of a celebratory nature. It is these scholars’ view that constituting the CRP context as such fails to recognise the intricacies of the concept. Their contention highlights the fact that education and pedagogy is not neutral.

Gay (2000) broadens the conceptualisation of CRP and defines it as using cultural knowledge, prior experiences, and performance styles of diverse learners to make learning more appropriate and effective for them. Such a context teaches through the strengths and vulnerabilities of the learners. Irvine and Armento (2001) illustrating the centrality of culture in pedagogical contexts postulate that the epistemological and cultural bias steeped in a euro-centric worldview and ideology is one of the primary reasons why historically, White middle-class learners have performed better than all other learner groups. Such cultural bias omits the experiences, history, contributions and culture of Black people, the poor and women. Specifically focusing on science education, Aikenhead (2006) argues that this traditional science context has only managed to socialise a minority and screened out the majority who comprise the diverse world and end up experiencing school as a foreign culture. This context is fuelled and sustained by assumptions premised on deficit notions (Delpit, 2006). This is the context for which culturally responsive pedagogy was evolved with the need to empower and

scaffold ethnically diverse learners, facilitate their academic success, foster their cultural affiliation and enhance their personal efficacy (Gay, 2010). Commenting on the overall South African context, Van Wyk (2002) posits that urban public schooling has its own culture grounded in historicity. Van Wyk (2002) postulates that colonialism constituted cultural emasculation that resulted in a genealogical death. Thus even though Black learners continue to be schooled, their schooling context constitutes them as alien, exotic, strange and minors who need special consideration. This context constitutes UBY as learners who require “strong classroom management, hyper-structured classroom environments and teaching that assimilates learners into an established world of school” (Emdin, 2010, p. 11). Despite observations by Van Wyk (2002) no scholarly work has proceeded to explore how UBY respond in this context. This study thus sought to enter into this space and ask the following questions: Was this the life sciences classroom context at NHS? Could the dissonance that my colleagues were experiencing be due to this context?

An examination of works concerned with CRP reveals that it has continued to grow as both scholars and practitioners continue to recognise the potential in the rethinking of pedagogy in a manner that belies traditional approaches to content, instruction and assessment (Emdin, 2010; Gay, 2010; Ladson-Billings, 1995; Lee, 2007; Nasir, 2002; Nieto, 2000; Parsons, 2005; Wortham, 2002). For example, Ladson-Billings (1995) explains how the incorporation of culturally recognisable content influences literacy development and how and why culture is an important component of instructional success with diverse learners. Nasir (2002) established the relationship between identity construction, culture and schooling and confirmed its integral role in the learning experience of UBY in the United States of America. Martin (2000) managed to re-centre historicity in pedagogical settings resulting in improved proficiency. While such work was based on the notion that the inclusion of culture-based elements would nurture identification and motivation among Black learners, observations were that cultural referents carried little personal relevance to the UBY and therefore did not necessarily facilitate the kind of learner engagement he anticipated. Such findings prompt us to think more critically about how CRP has been framed for Black learners and for the South African context. This aspect is so significant in light of critique on the integration of indigenous knowledge system (IKS) into mainstream curricula in South Africa. It prompts us to question relevance and adequacy of such transformations done in the name of CRP. One may justifiably be tempted to query whether the purported indigenous aspects in the current life sciences curricula are not as foreign to the UBY as they are for the Indian, Coloured and White learners in the same context. The issue

then became how to constitute and conceptualise CRP so that its spirit could be harnessed in generating contexts that could better serve all learners, UBY included, in life sciences classrooms.

As I embarked on this study I was fully aware of the cultural approaches I have mentioned. I was also aware of the findings on the progress made in understanding Black learners' experiences in science from research work which has since assumed a broader perspective, one drawn from cultural anthropology: treating science as a sub-culture of Euro-American mainstream white culture, which has found and confirm that Black learners find current science context "irrelevant to their cultural identities or repugnant to the social sensibilities" (Aikenhead, 2006, p.13). From these research findings I noticed that their impetus with regards to dispensing CRP has been hugely preoccupied with cultural congruity. Under the cultural congruence framework the context is mediated by learning practices and artefacts that the learners bring to the classroom (Lee, 2007). The inherent assumption is of prior knowledge on the part of the learners, not only with regard to science content and process, but also with regard to types of interaction and discourse through which science learning is believed to occur (Lukyx & Lee, 2007). Based on these assumptions I contended that such rhetoric tends to essentialise learner culture and borders on categorisation and stereotyping. Secondly in pursuance of a much broader perspective, I perceived such assumptions as underplaying the agency of Black learners, for it focused on what they bring from home. From the way culture was conceptualised for this study, Black learners were a cultural entity in their own right and what they brought from home was but part of their entirety, thus the nuance of bringing implied that they did not evolve their own cultural identities in the context. What is problematic with such assumptions is that they insinuate notions of deficiency and prop up the rhetoric of wanting to help Black learners adjust to the high and demanding cultural domain of life sciences through what they bring from home. My contention from these arguments was that the spirit behind the cultural congruency perspective hinged on problematic notions of cultural misalignment, border crossing and a discontinuous, static view of culture, which did not resonate with my views in this study. This spelt the need for a broader perspective and approach still within the cultural paradigm but transformative and recognised and respected learner agency. My argument was that there was no way that a lateral transfer of such a pedagogical model could adequately promote the creation of a context that South Africa needed for science education.

Observations from literature indicate that most of the work on CRP has originated in a context where the intended beneficiaries are the political minority and their homes are in the poverty-stricken inner cities. In this context the Black learners witness socio-political circumstances that greatly impact their lives and how they make meaning of their worlds. Factors such as crime, racially motivated violence, and parents' socio-economic marginalisation dominate their lives and interactions (Emdin, 2010). Cognisant of the fact that each learner's cultural reference, worldview, and history are unique to the experiences this learner has experienced (Harding-DeKam, 2014) it became apparent that work done in this context could not be superimposed and used to comprehend and explain the desegregated South African context. As opposed to the American context, the South African contextual narrative is socio-politically unique. Politically the South African story is framed within the context of apartheid in which difference was hierarchically construed within a meticulously engineered and legitimated pigmentocracy (Vandeyar, 2010). Internationally the narrative has been framed in light of segregation within multicultural frameworks. Secondly, the marginalised in the international context have been the political minority whereas in the South African context they are the political majority. Socio-economically the marginalised in the research context have been economically classified as poor (Singleton & Linton, 2006). This is not the case in mCs, as the learners come from the semi-affluent suburbs which cannot be equated to the inner city environs. Even those bused in from the townships pay the middle-class tuition fees asked for in these schools, and therefore notions of socio-economic poverty and deficiency may not be applied on UBY in such contexts. This situation begged an alternative understanding, hence this study.

Recognising the elusive nature of what constitutes home from which learners were expected to bring useful referents for use in life sciences teaching, and doubting the indigenous and traditional grounding of UBY in science classrooms organisational culture proved a viable framework. Organisational culture provided an alternative route through which UBY life could be nuanced at a deeper level in whatever context, rather than on what they may or may not bring from home. It was my view that this was a shift from a CRP perspective based on assumptions about what home may be like, explanations which in my view were problematic because they were susceptible to corruption by the teachers' agency as well. My alternative view of CRP cognisant of the here and now of culture were premised on Gay's (2010) understanding that locates CRP in the classroom context. Gay (2010) postulates that CRP "encompasses curriculum content, learning context, classroom climate, student-teacher

relationships, instructional techniques, classroom management, and performance assessment” (p. 33), all of which occur in the classroom and as such constitute and are constituted by the context. This is the context in which UBY were found and operated. For me this was the **home** away from home and as such constituted their dominant reality. This entailed that understanding what had been witnessed by my colleagues required an understanding of this context. Juxtaposing this context on the conception of culture adopted in this study, CRP therefore entailed a context that accommodated UBY tacit assumptions in the life sciences classroom. In this work, through exploring this context and deciphering UBYC in this context, CRP went beyond what Gay (2010) outlined above. It was my view that the classroom variables listed by Gay dynamically coalesced to create a context and this context constituted culture and CRP had to accommodate these cultures which were a product of the context constituted by the variables. The understanding therefore that undergirded this study was that the teaching pedagogical puzzle in life sciences in mCs could be tackled through a deepening of understanding of those that have been othered in these contexts and not through infusions of what is perceived to be associated with them which is tantamount to essentialisation. I firmly believed that what my colleagues experienced were symptoms of a deeper, yet to be unravelled cultural artefact and it was our research responsibility to establish the what and why? of such phenomena, harness the knowledge and transform practice.

2.5 URBAN YOUTH CULTURE AND URBAN BLACK YOUTH CULTURE

Researchers have sought deeper understanding of what *youth* are through employing principles of culture. Such inquiries have led to growing appreciation of youth as a distinct cultural entity rather than a stage of life (Garrod, Smulyan, Powers, & Kilkenny, 2012). With the view of culture adopted in this study, I concur with Schein (2004) in seeing youth culture as tacit assumption or maps of meaning that are produced and reproduced by young people. These maps of meaning constitute observable artefacts and espoused values (Schein, 2004) and render youth agentic intelligible beings. Taken this way, youth culture becomes the lived realities of the youth, here and now. Steinberg, Parmar and Richard (2006) present the duality of these lived realities of the youth as external and internal. The external reality encompasses all the artefacts and the internal reality the world view and life attitudes, the latter being what Schein (2004) terms fundamental assumptions.

Steinberg et al. (2006) argue for recognition of youth culture and contend that the way society views youth culture has an impact on the identity development of youth. Such a contention places consideration for youth culture at the centre of all that is done in high school,

where youth spend more than half of this stage of their lives. Globalisation further compounds the need to understand and consider youth culture in all that we do in the name of education. The World Youth Report (2005) affirmed that youth are at the cutting edge of globalisation and are the first to experience the globalisation of culture due to their unlimited access to information as well as information about values, attitudes and actions from cultures different to their own. From such exposure youth interpret and evaluate the world in distinct ways from adults and other social entities. With such exposure youth in different contexts need to be understood otherwise important aspects that define them may be relegated to redundancy to the detriment of society and its institutions such as education.

According to Jones (2009) youth and youth culture have been viewed and dealt with under a lens of blame and castigation. Jones (2009) affirms that there is a societal tendency to blame youth for what they do. Society does not only blame and castigate but also views youth culture as wrong and a challenge rather than an expression of the lived realities of the youth (Steinberg et al., 2006). Whilst youth are blamed for what they do, it is important to point out that little has been done to explore the systems that structure their choices. This situation and related views led Swartz (2009) to conclude that societal ignorance about youth culture has resulted in limited understanding of youth as well as their perceptions, expectations and practices. It is Swartz's view that youth culture remains a domain for exploration especially in science education in transforming contexts like NHS, where cultural diversity brings race, economics, socio-politics and institutional variables to bear on youth. This study was a response to Swartz's call.

In this study I focus on urban youth culture as produced and reproduced by Black youths. There are numerous studies that document the experiences and plight of UBY in public secondary schools, mostly in the United States of America and of late some in the South Africa's desegregated context (Dance, 2002; Duncan, 2002; Noguera, 2003; Swartz, 2009; Vandeyar & Killen, 2006). In the book *Tough Fronts*, Dance (2002) highlights five major characterisations of UBY in the public schools of United States of America. Dance (2002), observed that UBY are perceived as essentially inferior, deviant and dysfunctional, virtuous and central, victims of history and largely antagonistic to the establishment. Swartz (2009) in the South African context speaks of the pathologisation and marginalisation of the youth, who are seldom cast in a positive light but rather as troubled and troubling. However, findings such as these have not gone down with critics who question the spirit and motivation behind these studies. According to Duncan (2002), studies which tend to reinforce difference are not based

on epistemic advancement but rather confirmatory curiosity and justification of institutional control. As such, institutions may be left unexamined for their role in the reproduction of unjust institutional structures (Delgado, 1995).

The body of academic writing about Black South African youth is substantially smaller in comparison with that of the United States of America. Despite this comparative difference the script reads the same with some contradictions. With South Africa's turbulent history UBY have been cast as heroes and in this democratic dispensation as villains and marginalised (Swartz, 2009). Most studies have focused on township youth and have developed uni-linearly through a presentation of UBY as a delinquent and violent mass (Swartz, 2009). Popular movies like *Yizo yizo*, (2001); and *Tsotsi*, (2006) have not helped in stemming this stereotypic nuance. In these movies UBY are cast as a violent criminal and amoral social entity. Though there has been a limited positive media representation of UBY, it was my view from the puzzling phenomena brought up by my colleagues that there was a possibility a certain culture had been created in the life sciences context. It was not indigenous because 'Ubuntu' which is the basis of African society does not provide for youth to antagonise and agonise adults as what was happening in the life sciences classrooms. This was a 'new' cultural phenomenon and its architects were UBY and its potency could not be ignored in light of what South Africa needed to achieve through science education.

This study was rooted in the belief that all children irrespective of any label ascribed to them can be educated at the highest level. The work of scholars like Emdin (2010), Ladson-Billings (1995) and Luykx and Lee (2007) with UBY made this belief an objective fact rather than a mere articulation of faith. My conviction in undertaking this study was that I deemed it possible to decipher, understand and explain what had been found puzzling about UBY in the life sciences classrooms. Thus, this journey was undertaken out of a refusal to accept the media sustained positioning of UBY. What I endeavoured to do was to possibly generate another explanatory narrative through an exploration of UBYC as a separate, unique and potent reality with UBY as active agents.

2.6 CULTURE AND POWER

In this section of this chapter I consider culture and power in science education. I regarded the culture-power connection as crucial in understanding Black learners' positionality within the desegregated school environments such as at NHS. The question that arises in studies like this one is why do we need an analysis or a study of the concept of power when researching

UBYC in science teaching and learning contexts? In response Schoenmakers (2012) postulates that power is an integral part of the architecture of relations. Schoenmakers' postulate is affirmed by Foucault (1980) who contends and suggests that the privileged place to observe power in action is in human relations or between humans and human institutions. Trying to address the same question, Morriss (2002) offers a three-pronged response. Firstly, the concept power and its analysis enables us to evaluate social systems with regards to the extent they promote the agency of their citizenry; secondly, it allows us to establish in a practical way our capabilities to achieve desired outcomes; and lastly, from a moral dimension it directs us to who to apportion blame for observed enactments (Morriss, 2002). Whilst concurring with the scholars, it was my view that by conceptualising culture as porous and pluralisable it implied the need to examine patterns of power relations and how they contributed in constituting the context and their culpability in what was unfolding in this context.

Wolf (1999) posits four ways in which power is woven into social relations: the power of potency, what he regards as the inherent capability of an individual; power as the ability to impose one's will on another in social activity; tactical or organisational power through which ethnic groups circumscribe the actions of others within specific contexts; and structural power which dictates the intricacies of settings and directs and channels energy flows. From these notions multiple definitions of power have been put forward. For this study I consider two such definitions. Yukl (2006) defines power as the inherent ability of one agent to exert their volition on another agent (the target). McLeod and Lin (2010) conceptualise power mathematically as that interactive forces that are exerted by one party on another and the related response they trigger in the target. Critical aspects that emerge from these definitions include, firstly, the notion that the essence of power is agency. Secondly, because individuals are agentic, there is a presupposition of knowledgeability of agents' enactments. This aspect nullifies the discourse of structural determinism in relation to agency as agents are imbued with the capacity to choose and to act as they see fit (Giddens, 1979). Such a broader view of agency goes beyond just perceiving power as being at work when it is exercised intentionally and positively. According to McLeod and Lin (2010) agents can have power that they never exercise, and can have power the effects of which they do not intend. In this study I insisted on this broader view as it held agents (UBY and all other players in the classroom) responsible for consequences they neither intended nor positively intervened to bring about. Thus all players became culpable for the culture of power observed in life sciences classrooms.

Connecting culture and power, Wolf (1999) argues that the capacity of culture to bring together different sectors of social life is the essence of the fundamental force of culture. This force or connecting factor, Wolf (1999) regards as power. As a connecting factor power is responsible for connecting all cultural elements, that is, all that is happening in the domain of social relations encompassing the domain of artefacts, espoused values and fundamental assumptions. From a functional perspective, Schoenmakers (2012) contends that assigning of meanings, meaning-giving and social constructions which is the essence of culture, occurs in the context of power relations. Thus, the social organogram, subordination, inclusion and exclusion and other mechanisms of social arrangement and re-arrangement are intrinsically constituted within power discourse as the contestation of meaning-giving differentially positioned agents. It was my view that such a state constitutes the culture of power in context.

In science education the culture of power has been regarded as a state of being or system of meanings and enactments that inequitably elevates certain ethnic groups to positions where their cultural capital has more currency than their non-culture-of-power peers (Barton & Yang, 2000). Regarded this way, the culture of power is constructed as a context that renders a force and ability to influence the social domain, its various spheres of activities and the relations between agents within pedagogical settings. Accordingly the culture of power and its effects are regarded as part of human institutions, schooling included (Barton & Yang, 2000). Conceptualising power in relational terms as suggested by Foucault (1980) and Schoenmakers (2012) proved important and advantageous as it allowed an examination of power as another critical aspect of UBY life in life sciences classrooms at NHS. Thus, researching UBY in life sciences classrooms in mCs was by default a matter of researching power relations between all parties involved in the teaching and learning of life sciences in mCs, despite centring UBY. The question that begs is where does agency come from?

According to Emdin (2010) power is inherent in culture. Emdin is of the notion that the mass of information, facts, skills and abilities that make up one's culture (schema and practices) are held in a symbolic toolkit that is drawn upon when an agent feels the information within this toolkit is needed for dealing with a particular situation within a social field. The information in this symbolic toolkit (culture) gives rise to power or agency that actors feel they can enact within a particular field. The contention here is that all individuals as posited by Foucault (1980) have power, hence agency and they can make choices which may be shaped by both the available opportunities and the norms present within the cultural milieu in which they are situated. Foucault's position compels us to recognise that learners' power plays a major

role in all that is observed in schools and classrooms as human institutions and the way in which identities like those of UBY are constructed and formed. The research responsibility implicit in this is to establish how this agency constituted by individual power is enacted. Research has begun to acknowledge this power dimension. Studies by Devine (2003) have indicated that learners in school have power which manifests covertly and indirectly. Due to this power being covert and indirect, learners' power enactment is an area that has received little attention in science classrooms in South Africa. It is from this angle that I endeavoured to make a contribution. For this reason this research did not shy away from exploring how power operated and manifested in life sciences classrooms as UBY enacted their agency.

Traditional notions of the culture of power in classrooms have been best captured in the work of Delpit (2006). In her treatise, *Other People's Children*, Delpit (2006) views the culture of power in schools as having five aspects or premises she presumes are directly related to the experiences of Black learners whom she regards as other peoples' children. The first premise suggests that classrooms are central locations in which issues of power are enacted and can be witnessed through teacher-learner and learner-learner interactions. Secondly, there are guidelines, codes and rules attached for participating in power, which Delpit (2006) identifies as the culture of power that includes ways of talking, dressing and ways of interaction. Thirdly, within the culture of power are rules reflecting those in power or the culture of those in power which are intentionally designed to cater to their needs. Fourthly, those outside the power group and desire to participate in the culture of power will find it easier to do so if they explicitly access the rules of that culture. Researchers contend that without making the rules for the culture of power explicit, outsiders to the culture will lack opportunities for upward mobility and risk being labelled deficient, inferior, disadvantaged and a cause of societal problems (Barton & Yang, 2000). Lastly, Delpit (2006) makes the point that hegemony exists in many invisible forms and those in the power group are least aware of its existence or their position and may be less willing to acknowledge it. Conversely at the other end of the spectrum, those outside the power group acknowledge and are acutely aware of its existence and are cognisant of their limited access to those things they feel are necessary for their survival.

In their study Barton and Yang (2000) highlight the dominance of Delpit's ideas and emphasise the persistence of the discourse of disadvantaged or at risk premised from Delpit's notions. The scholars posit that such discourse has continued to shape educational policies and classroom practices and its usage has largely been restricted to UBY for a variety of structural and ideological reasons and as they are presumed to be outside the culture of power. They

contend it is for this reason that UBY have been targeted for remedial and compensatory programs. However, research has shown that remedial programs that undervalue the cultural standpoints of the participants or those intended to remediate children have been unfruitful in achieving success in educational settings (Anyon, 1997, Emdin, 2010, Gay, 2010). In this study I found Delpit's perspective problematic for two reasons. Primarily this perspective believes that the status of the learners is their fault and results in their inability to function normally within the established schooling framework. Secondly, this perspective seemed premised on neo-Marxian notions of structuration that are preoccupied with polarised power with the dominant and those historically vanquished. In this context individuals (those outside the power group) are regarded as eternal puppets of the ideological and repressive apparatus as power flows uni-directionally, from the top downwards. My view as I undertook this study was if Delpit's ideas held ground then my colleagues wouldn't have brought up all the issues that they did because they would have been in control as they belonged to the power group, by not being Black. The fact that they brought up all those issues implied the existence of some other culture of power in life sciences classrooms at NHS other than one espoused by Delpit. This study therefore was a deviation from Delpit's neo-Marxian power analysis as it sought to explore the other culture of power that seemed to be breaching the levees of the dominant view of the culture of power within the science education context.

Foucault (1980) supports the above analytical shift as he proposes an alternative model in which power relations dissipate through all relational structures of society. Such a conception allows the exploration of the daily and mundane manner in which power is exerted and contested. Foucault's power notions also facilitate an analysis that centres on the human individual as an active subject, not as simple objects for power. Adopting Foucault's ideas reconfigured conceptions of power and nullified assumptions of powerlessness. The Foucauldian power framework was amenable for this study because power analysis could be done without minimising the restrictions imposed on individuals by history. Power under this Foucauldian perspective is presented as volatile, unstable and contestable, hence power relations are constituted as dynamic. Anchored within a Foucauldian framework it was my view that there was a possibility of deciphering UBYC in life sciences within a holistic framework that accommodated power. My view resonates with the call by McLeod and Lin (2010) for teachers to understand learners' power and their social worlds as this would enable them to identify with them easily and attend to their academic needs more readily and effectively. It was my view that researching desegregated contexts and the pedagogic settings

thereof needed to proceed in ways that explored and acknowledged the power of UBY, paying particular attention to the ways this power was operationalised and influenced the life sciences context.

2.7 CONCLUSION

The above literature review has sought to explore and present perspectives that underpin the indispensability of UBYC-conscious approaches in life sciences education in desegregated contexts like NHS. In it I endeavoured to challenge the self-contained monovocal views of culture, meaningful pedagogy, ethnicity, identity and power with a particular focus on how alternative perspectives may be fruitful avenues for understanding and explaining developments in science education contexts in desegregated schools. Through this review of literature I have tried to unreservedly advocate for the continued interrogation of culturally determined discourses in the transforming classrooms of desegregated South Africa. This venture and its attendant overtures places on the agenda the belief that **ALL** learners must know and be able to do life sciences at the highest level since that is what schools and society measures. My view was that the mono-cultural, traditional and positivist visions of science are unsustainable in a global context, where critical questions like “Whose knowledge are we teaching?” and “Whose knowledge is most worth?”, constantly feature in curriculum debates (Barton & Yang, 2000, p.876). It was such questions compounded by my colleagues’ experiences that impelled this study to challenge the dominant discourse and explore the possibility of alternative understandings and interpretations.

In the next chapter the analytical and conceptual framework for this study will be presented. The purpose of chapter three was to establish the analytical and conceptual frame for deciphering, understanding and explaining UBYC.

CHAPTER THREE

ANALYTICAL AND CONCEPTUAL FRAMEWORKS

3.1 INTRODUCTION

My intentions in this study were two-pronged. I endeavoured to lay the analytical or philosophical foundations of this work. I strived to tease out from various theories an epistemological base to help me explore, explain and theorise UBYC in grade eleven life sciences classrooms at NHS. This framework of theory and concepts was to assist in exploring what was going on in grade eleven life sciences at NHS, and with that understanding, explore how and why it was influencing teaching and learning. Trying to understand what was happening in the life sciences classrooms could not be done in isolation, but required to be explored in the context of NHS, as the educational institution, life sciences teachers, as the architects of the classroom structure, and UBY, as the group whose enactments needed to be understood. To establish a clear and informative foundation for the work I wished to produce, it was important that I dealt with conceptual and analytical constructs I presumed pertinent for the research study. In this regard I chose to open up the conceptual and analytical space to consider a number of such constructs. This conflation of constructs was mooted from a realisation that no single analytical or conceptual framework could adequately address the scope of the exploration needed to unravel the puzzling phenomena. Despite main ideas of this framework emerging from key theorists, it was my view that in order to firmly establish the foundations of this study there was need to occasionally reach outside these immediate theories for other analytical and thinking tools. As such I regard my endeavour in writing this framework an exercise of building bridges between disciplines as I laid out themes from educational psychology, sociology and politics that spoke to this research development.

I have divided this chapter into two parts. In the first part, I present the analytical framework used for illuminating exploration of the three groups: NHS, life sciences teachers and UBY. In the second part I present the conceptual framework that was instrumental in context analysis and interpretation of findings.

3.2 ANALYTICAL FRAMEWORK

This analytical framework is predicated on organisational culture. Organisational culture theory seemed an adequate analytical framework for this study because it accommodated two pertinent aspects; that of understanding human groups and the deciphering of group cultures.

Organisational culture was also adequate as it guided this study on three crucial fronts. Firstly, it opened up the possibility of cultural analysis through its adaptable models for cultural analysis. Within the frame provided by organisational culture, three organisations NHS, life sciences teachers and UBY needed to be studied at the three levels – the level of artefacts, espoused values and beliefs, and basic assumptions and my report had to be structured as such. Secondly, through its tenets, organisational culture theory had implications for the research design, methodology and data collection. Lastly, organisational culture seemed an adequate analytical framework as it guided data analysis through provision of a guiding paradigm for fundamental assumptions.

In the following sections I present the thinking tools (Rawolle & Lingard, 2008) from organisational culture that formed the analytical foundations for exploring the puzzling phenomena in the life sciences classrooms at NHS. I present these constructs under the following headings: organisational culture and the social world; organisational culture and culture creation; organisational culture and the nature of culture; and organisational culture and models for deciphering culture.

3.2.1 Organisational culture and the social world

Within organisational culture the social world is constructed by people and is produced by the human networks constituted by deeper meanings (Gajendran, Brewer, Dainty & Runeson, 2012). In the social world, premised within organisational culture, humans are social beings with an inherent propensity to organise into groups (Groth, 1997). As humans organise, they form organisations. Thus, organisations are expressive forms of human consciousness (Gajendran, et al., 2012) constituted in observable patterns of human actions (Vujicic, Kanjic & Tambolas, 2015). Within organisations humans enact under their respective local modes of rationality. Local modes of rationality are constituted by collectively held interpretive systems of meanings that constitute agents in groups. Within organisational culture, these interpretive systems are culturally-nuanced and accord groups or organisations the ability to self-determine and execute observable actions (Schein, 2004). Thus, to understand organisations as systemic social systems we have to shun simplistic, objectivist and functional views of organisations. This entails going beyond observations alone into the realm of subjective meanings for the people involved in cultural settings (Gajendran et al. 2012). It is within this realm that agents' basic and tacit assumptions or organisational culture is located (Nazarian, Atkinson & Greaves, 2014).

Organisations as human constructs can be mechanistic/functional or systemic/ecological (Casey, 2002). Mechanistic organisations consist of rational beings, functionally interacting and for whom relationships are of secondary importance. Systemic organisations consist of inter-related, ecologically inter-dependent and synergistically interacting human elements (Vujicic, Kanjic & Tambola, 2015). Conceiving organisations as social relationships falls under the systemic view (Casey, 2002). It is within this conceptualisation that schools are viewed as systemic organisations, consisting of discrete elements engaged in complex, culturally nuanced interactions. Thus, within the systemic view, organisations like NHS, the life sciences teachers and UBY in the life sciences classroom represent a network of synergistic relationships that form patterns that merge into one organic whole. This implies the existence of organisations and organisations within organisations. Thus, to understand a constituent organisation within an organisation there is need to understand other constituting organisations within the greater organisation. This aspect centres the importance of context in organisational exploration. Such explorations circumvent the simplistic trap of linear causality and opens up analysis to realities in the immediate setting. The intrinsic value in this perspective is that puzzling phenomena as was being experienced in life sciences classrooms at NHS could be explored and understood more holistically in a broader context. With this ecological understanding, exploration of phenomena or perplexing human action, moves from the individual to an interrogation of relationships within specific cultural environments in which the relational network is likely to be observed (Marais & Meier, 2010).

Under the systemic view of organisational culture, organisations like the life sciences teachers, NHS and UBY are organic, dynamic and open social systems. By virtue of the three cultural attributes these organisations influence each other's structuration. Also under this analytical frame, enactments by culturally informed agents in one organisation are contingent on the enactments of agents in other organisations within the social world. It therefore follows that actions by agents in one part of educational settings are contingent on other agents who are active participants in other organisations within the educational setting. Such contingencies or interacts (Clegg, 1990) if they are regular, produce organisations as well as institutionalise group meanings or basic assumptions. Framed within organisational culture, the understanding of a group's culture or basic assumptions therefore has to explore systemic contingencies.

In the ensuing presentation I frame culture creation and how culture can be analysed. The presentation is still within the analytical frame of organisational culture but I lean towards Schein's organisational culture theory. I leaned towards Schein's theory of organisational

culture because it seemed insightfully structured, an aspect that was crucial for exploring the puzzling phenomena. Secondly, Schein's theory is responsive and adaptable in the context of organisational change, like that brought about by desegregation. Lastly, scanning literature, Schein's work has been recognised as highly influential, (Desson & Clouthier, 2010; Hatch, 1993; Heracleous, 2001, Gajendran et al., 2012), to name a few. From scanning literature on organisational culture it seemed his work provided a solid analytical foundation.

3.2.2 Organisational culture and the creation of cultures

For Schein (1984) understanding culture creation has to be done in the context of the concept - group. Without the group, there is no culture, and without culture, there is no group. A group or organisation consists of people who have been together for long durations in which they have shared critical incidents and significant problems; had opportunities to confront their challenges and witness the influence of the results of their solutions and have taught these solutions to new members (Schein, 1984). A group's culture cannot be created or deciphered unless a set of people conforms to the criteria above. Another important aspect of the group that emerges from the criteria above is that by having stayed together over a long period of time, a group has a shared history.

From group understandings as discussed above, Schein (2004) defines organisational culture as a pattern of shared basic assumptions developed by a group as it learnt to solve its problems of external adaptation and internal integration that has worked well enough to be considered valid and therefore worthy to be taught to new members as the correct way to perceive, think and feel in relation to those problems. The collectively held assumptions provide a template of how the collective or a member is supposed to feel, think, or perceive in relation to these contexts. It is important to note that the process of culture creation in this case is identical to group formation in that the very essence of "groupness" (Schein, 2004, p. 68) or group identity – shared patterns of thought, belief, feelings, and values that result from the shared experience and common learning, results in shared tacit assumptions which are the very essence of culture (Schein, 2004). According to Schein without the shared tacit assumptions there is no culture, but just an aggregate of people, not a group.

According to Schein (1984, 2004) culture creation is either interactive or prescriptive. In terms of prescription, leaders, founders or significant others prescribe norms, values and beliefs that they regard as crucial for the organisation and expect those within the sphere of influence to adopt them (Schein, 2004). In this case the founders of the organisations become the culture

creators as they proffer direction on how the groups initially define and resolve their internal and external adaptation problems. The entitlement of founders to offer direction emerges from them being the source of the original idea that brought the group members together. According to Schein (2004), founders have their own notions based on their own history and tend to hold strong assumptions about the nature of the world, human nature, relationships, truth, time, space and on the basis of this strength they impose their views on those around them in the organisation and from this the organisation's culture is created. Also within the prescriptive model of culture creation, the organisation's members co-create the organisation's culture as they individually interact with their environment. Each active agent prescribes sources, values and beliefs, which the group collectively interrogates culminating in the creation of organisational culture by consensus. Under this perspective culture creation occurs through importations of recognisable needs and assumed solutions by members of the collective.

According to Schein (1984), culture is interactively created through two models:- the social trauma model, in which culture creation is aimed at anxiety and pain reduction; and the success model, in which culture is created through positive problem solving situations that produce positive or negative reinforcement. As members go through trauma as a collective they share the problematic context, collectively develop coping and trauma avoidance strategies which then become ritualistic ways of thinking, feeling, perceiving and acting. With time, coping strategies become deeply embedded in individuals and assume a sub-conscious locus. Located in the sub-conscious domain, ritualistic coping strategies become fundamental assumptions (Schein, 2004). These collectively learned tacit assumptions constitute the jealously-guarded cultural domain of the group or what can be regarded as the group's survivor pack. In this domain is located the capacity of the group to survive its external environment through coping with anxiety and potential trauma as well as manage its internal affairs.

Through the success model, Schein (1984) theorises that when a group as a collective is confronted by a problematic context, it tries out various methods to resolve the problem until ultimately one solution works. Solutions that work are made part of the group's cultural toolkit and is internalised as a basic tacit assumption. This aspect of the success model involves positive reinforcement. The success model also involves negative reinforcement when solutions work by reducing anxiety and trauma. Such solutions are most likely to be repeated and influence the nature of basic assumptions held by a group (Schein, 1984). The nature of these basic assumptions is that they will promote rewarding enactments, and avoid those associated with anxiety and trauma. In this regard the success model of culture creation is

intertwined with the cognitive stability, consistency and intrinsic motivation. Schein (1984, 2004) posits that these three psycho-emotional aspects are the ultimate determinants of groupness, through provision of a common language and shared cultural nomenclature. Any contextual variable that causes dissonance in these three aspects proffers intolerable anxiety to the human organism (Schein, 1984). According to Schein (2004) basic assumptions operate unconsciously and are non-negotiable as opposed to espoused values and beliefs. Basic assumptions or culture through influencing thought, perception and feelings, is located deep in the being within the same domain as intrinsic motivation.

According to Schein (2004) fundamental assumptions are stable, resilient and very difficult to change. What makes changes to basic assumptions inconceivable is the fact that any learning in this realm temporarily destabilises one's cognitive and interpersonal world as one resurrects and re-examines the more stable portions of their cognitive make up. This double-loop learning or frame-breaking generates a lot of anxiety and rather than tolerating these high levels of anxiety, group members tend to want to perceive their contexts as congruent to their assumptions (Schein, 2004). Such anxiety avoidance based on strongly held assumptions brings out performative practices which may involve distortion, denial and falsification of experiences by group members. It is in this psychological process that culture has its ultimate power (Schein, 2004). In this regard the shared basic assumptions function as the last line of identity defence, both at the individual and group level. The power of these trauma-avoidance mechanisms allows the group to function and thrive in contexts of adversity. It is on this notion of its inherent ultimate power that Schein (1990) postulates that in cultural analysis we need to pay attention to basic assumptions as they define for us, "what to pay attention to, what things mean, how to react emotionally to what is going on and what actions to take in various kinds of situations" (p. 32). The endeavour in cultural analysis is therefore to determine the source of assumptions, whether they were meant to solve problems or avoid anxiety. In the context of this study, the context in which UBYC was developing had to be explored in terms of its influence on the cognitive stability, consistency and intrinsic motivation of UBY. This dimension was associated with the first research question. Secondly, in descriptions of the nature of UBYC in life sciences at NHS, deciphered assumptions ultimately had to be located within Schein's framework for culture creation. This was part of addressing the second research question. Lastly, this part of Schein's analytical framework was invaluable in addressing the why question of this work - research question four, as well in the development of the thesis chapter, as I made recommendations made and propositions for changes in practice.

3.2.3 Organisational culture and the nature of culture

According to Schein (2004) the essence of culture for any group are the basic assumptions. The question that arises is, assumptions about what? Schein (2004) argues that it is through addressing this question that description of any particular culture can be made. However, Schein (2004) hastens to point out that assumptions revolve around two fundamental challenges, that of external adaptation and internal integration. The typology of any culture, according to Schein (2004) is thus a reflection of the ultimate problems that the group would have faced in dealing with its external environment and managing its internal integration. In dealing with the challenge of external adaptation, the context in which agents find themselves in, becomes important. It is in the re-centring of the context that the examination of context in cultural analysis is crucial. Challenges of internal integration bring into focus group dynamics of organisations.

Issues of external adaptation specify the coping cycle that the group or organisation underwent or is undergoing as it adjusted to its challenges in its environment. According to Schein (2004) the essential elements of a coping cycle include: mission, goals, means, measurement and correction. Mission spells out the shared concept about a group's survival problem from which its reason-to-be is derived (Schein, 2004). Through the mission the group addresses its positionality in the larger scheme of things and justifies its continuous existence. Mission statements can be public justifications as well as latent strategies which are not spoken of to protect the identity of the group (Schein, 2004). On the second element, the organisation or group, through a common language concretises its mission into time-framed goals. These goals reflect the immediate survival issues that the organisation identifies and once there is consensus on them, assumptions about them become very strong (Schein, 2004). For Schein (2004) a group cannot achieve its goals and fulfil its mission without consensus on the means. As the group reaches consensus on the means, many of the internal issues that the group must deal with are partially settled (Schein, 2004). Patterns of agreements on means determine the style of organisation, division of labour, accountability structure and information systems. Thus, means embodied in skills, technology and knowledge that the organisation employs become part of its culture. Measuring results is an element necessary for organisations or groups to monitor progress. According to Schein (2004) this element is concerned with issues of what to measure and how to measure it. The last element in a coping cycle involves means to remediate structures, means and processes in the event that the mission goals are not accomplished.

For groups to collectively function they have to deal effectively with issues of internal integration. Firstly, to function as a group, individuals who come together must establish a common language and conceptual categories that allow reciprocal communication and interpretation of what will be observed or perceived (Schein, 2004). This common language and conceptual categories provide a discourse filter that allows for coordinated action. Signals used in communication delimit semantic space and failure to grasp semantic assumptions can result in communication problems (Schein, 2004). As groups deal with external and internal threats they develop their own language and conceptual categories that further entrench their assumptions. Schein (2004) observed that semantic and communication stability is greatly enhanced and facilitated by all members of the group coming from the same initial culture.

Secondly, for a group to function and develop there is need for consensus on group boundaries and identity. The need in this aspect is for absolute certainty about who is in the group and who is excluded. According to Schein (2004) non-group members are ascribed another identity and become a part of another mass called outsiders. To Schein (2004) outsiders are usually stereotyped and treated with indifference and hostility. Those who fall within the inclusionary criteria are privy to most assumptions, as well as group secrets which may include knowledge of rituals, historical accounts of the group and even the hidden organogram of the organisation (Schein, 2004).

Thirdly, every group develops norms around the distribution of influence, authority and power. When these norms work, they translate into basic tacit assumptions and are regarded as critical genetic elements in the cultural genome of the group. Fourthly, the group needs to decide how to deal with authority problems and how to establish functional peer relationships. Citing Freud on this aspect, Schein (2004) points out that the cultural model used in the creation of new cultures usually reflects that of the group in which the agents would have spent their formative years of life. Such models include the rules for dealing with authority and the essence of peer relationships. The fifth internal problem that a group has to contend with, and from which assumptions form, is the need for a criterion for allocating rewards and punishment. Every group has to have a system of sanctions for obeying and disobeying its norms and rules. Such sanctions, according to Schein (2004) can be symbolic or can exist in actuality. Identification and understanding of the system of sanctions reveals important rules and tacit assumptions of that organisation. Lastly, organisations need a way of coping with unmanageable, unpredictable, unexplainable and stressful events. Theorisations of how to cope with stressful events usually end up as group myths and are passed on as ideological or

superstitious solutions to some unexplainable challenges faced by the group. Such theorisations become rationalisations for essentially unexplained actions and serve as group equivalents for religion, mythology and ideology (Schein, 2004).

Beyond these external and internal challenges, basic assumption ultimately reflect deeper assumptions about: the nature of reality and truth; time; the nature of space; human nature, activity and relationships (Schein, 2004). According to Schein's theory, assumptions developed by groups about external adaptation and internal integration also reflect these deeper assumptions which are critical for organisations or groups to function. These deeper assumptions tend to influence how external adaptation and internal integration are handled.

On the nature of reality and truth, Schein (2004) argues that reality in organisations can be social or individual. Truth can be objective, pragmatic or debatable or it can be subjective and based on consensus. With regards to time-orientation, organisations can be past, present, near-future or distant-future oriented. Also organisations can view time as monochronic or polychronic. In the former view, time is linear and compartmentalised which means one thing can be accomplished at a time. Under a monochronic view, time is a valuable commodity because only one thing can be done at a time. Polychronic time, on the other hand, is regarded as a medium defined more by what is accomplished than by the clock, hence several things can be done simultaneously (Schein, 2004).

On the nature of space, the issue is on space usage and distance relative to placement. In both cases space usage and placement indicates the values placed on autonomy and empowerment (Schein, 2004). According to Schein (2004) more subtle uses of space involve the use of gestures, body position, contextual placements and other physical cues in particular settings which expose the nature of relationships in context. On a gross level, according to Schein (2004) whom we sit next to, whom we physically avoid, and whom we touch all convey assumptions of relative status and intimacy. On human nature, organisationally, assumptions are exposed in how agents perceive each other. According to Schein (2004) human nature can be rational-economic, social with primary social needs, problem solving and self-actualising or complex and malleable. Assumptions about human activity regulate the appropriate ways to act, relative to the environment. Orientations of human activity include doing-orientation, being-orientation, and being-in-becoming orientation. These aspects served as analytical tools in the exploration of the context and addressing both the first and second research questions.

The last type of abstract assumption is that of the nature of human relations. These are assumptions about how agents ought to relate for peaceful co-existence in ways that they feel secure, competent and productive. Human relations, according to Schein (2004) can assume two forms, competitive individualism or collective communalism. Relations also can have a high or low power-distance which is the degree to which people in a hierarchical situation perceive the ability to control each other's actions (Schein, 2004).

The discussion above has outlined what culture is from Schein's organisational culture theory. Culture as basic tacit assumptions, according to Schein's theory has a deep, invisible locus. The challenge that requires framing is how culture can then be explored and described by those external to it. In the next section, Schein's organisational culture as a analytical framework tackles this challenge.

3.2.4 Deciphering Culture – A Model

Conceptualising the nature of organisational culture requires the studying of cultural manifestations. Gajendran et al., (2012) argue that manifestations are crucial as they are the observable attributes of culture which can be deciphered and used in organisational culture analysis. Cultural manifestations occur at different levels which range from shallow to deep. Variation in the locus of cultural manifestation entails that cultural analysis and deciphering can be done at multiple levels. Scholars of organisational culture have developed models for cultural analysis based on cultural manifestation (Hofstede, 2001 & Schein, 2004). These models as shown in figure 3.1 reflect the varying perspectives on manifestations that represent culture.

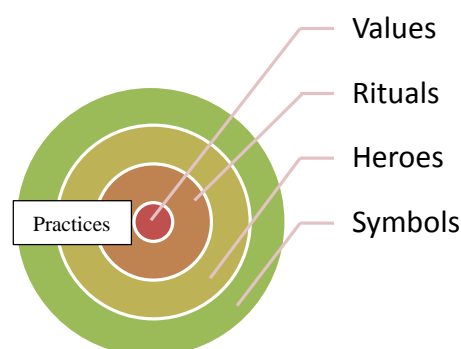


Figure 3.1 Hofstede's Model of cultural manifestation (Gajendran et al. 2012, p. 5)

Hofstede's (2001) model presents observable cultural manifestations as symbols, rituals and heroes. These manifestations are constituted in practices that the organisations engage in.

For Hofstede, organisational culture is constituted by a deeply located cognitive framework of values. Thus, culture according to Hofstede's model manifests as values, hence meaningful cultural analysis has to decipher these values. Explaining his model, Hofstede (2001) posits that organisations are differentiated by practices, rather than values, an aspect which makes cultural inferences based on his model superficial and shallow. Hofstede (2001) conceptualises values as something that people accrue from early socialisation as their personalities form. This conceptualisation of values locates culture through values in the past and does not account for its dynamism in organisations. This conceptualisation fails to accommodate the reality that organisational culture is based on actions of active agents in a later stage of life. Lastly, Hofstede (2001) postulates that the organisational culture may not be visible to all involved in the organisation. Implicit in this view is the notion that an agent can be part of an organisation without being a participant in the culture. From a systemic view, Hofstede's model is limited in fully conceptualising the dynamism of organisations, which are groups bound by the social glue, which is, culture as argued by Schein (2004).

Schein (2004) developed an analytical model (Figure 3.2) for cultural analysis which I adopted for this study. The choice was not based on the model having received less criticism (Kong, 2003) but due to it having been operationalised before (Schein, 1990) and its ability to integrate a number of perspectives in cultural studies (Desson & Clouthier, 2010). Adoption of Schein's model for cultural analysis was a deviation from anthropological and sociological approaches that have dominated the research of cultures in education. My adoption of a different lens was not an indictment of other approaches, but it was my view that to better comprehend puzzling phenomena in life sciences classrooms at NHS, perhaps a different analytic tool was needed. It was with this notion that Schein's model was invoked as an analytical tool for deciphering UBYC in life sciences classrooms at NHS. Schein's model is shown in figure 3.2 below.

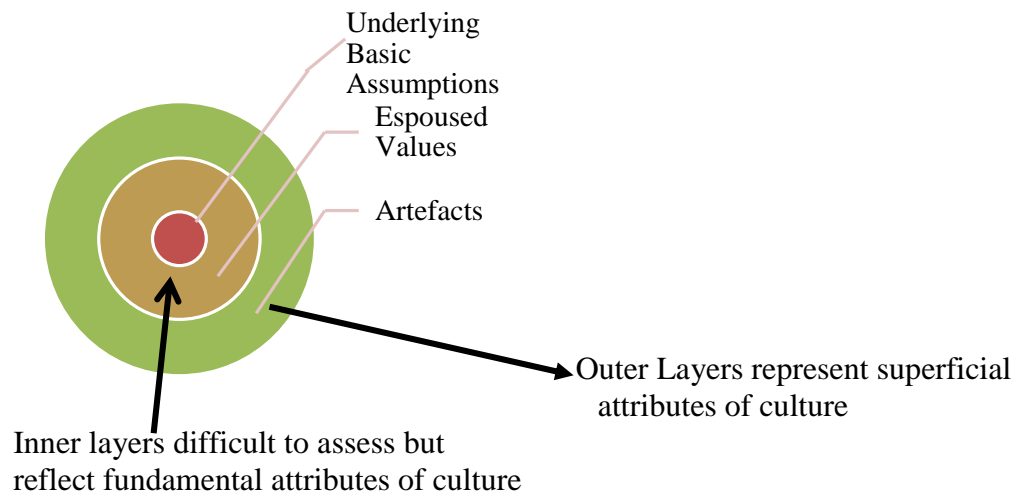


Figure 3.2 Schein's Model of levels of cultural manifestations (Schein, 2004, p. 25)

Schein (1990, 2004) proposes an inductive model to decipher culture, which is now known as Schein's levels of culture. Schein (2004) posits that the term *level* implies the degree to which the cultural phenomenon is visible to the observer. In coming up with the idea of levels, Schein (2004) was of the notion that the confusion surrounding the definition of culture emanates from the failure amongst many theorists to differentiate the levels at which culture manifests itself, simultaneously. In his model Schein (2004) postulates that culture can be studied and analysed in terms of three interrelated levels: artefacts, espoused values and basic/fundamental assumptions. These levels were adopted and used in studying and mapping UBYC at NHS.

According to Schein, the first level encountered in a cultural study is that of artefacts. Artefacts encompass all the phenomena one sees, hears and feels within the study setting. Artefacts include all the perceivable products, artistic creations, socio - emotional values, codes of language and observable rituals of a group. Schein (1990) hastens to point out that though artefacts are easily observable, interpretive reconstructions cannot be made from them. His argument is that if reconstructions are made at this level they will be shallow, due to the researcher's limited and surface level engagement with the research setting. Schein (1990) further contends that if reconstructions are done at the first level they will be mired in projections of the researcher's own feelings and reactions. It is from this inherent pitfall that interpretation has to be on deeper interrogations and sustained conversations with participants through multiple methods of data collection and intensive face-to-face interviews.

After his initial argument against first level inferences, Schein (2004) posits that it is possible to draw inferences at the first level if one has also experienced the culture being

researched at the deeper levels of espoused values and fundamental assumptions. By being in the same larger culture, for example in this study, I was also urban and Black as were UBY, and from Schein's frame I could invoke my immediate insight to construct meaning as I encountered UBYC artefacts. This notion is affirmed by other scholars who contend that organisational culture can be transformed and reformed through focusing on the more visible superficial cultural aspects as they largely influence actions (Donnell & Boyle, 2008). However, despite my opinion, my approach continued to be framed by Schein (2004) who urges cultural studies to go beyond the surface level to excavate espoused values.

Espoused values, according to Schein (2004) are a "sense of what ought to be as distinct from what is" (p. 28). Espoused values develop over time, based on workable solutions to critical problems a group faces. Espoused values can be regarded as the original values and beliefs that caused the emergence of the group and reflect the moral values and insight of the incumbent members and their pragmatism (Schein, 2004). Espoused values serve the normative and moral function of intrinsically guiding the group and as a way of dealing with intrinsically uncontrollable situations, uncertainty and an avenue for inducting new members into acceptable codes of conduct in the group's operational context (Schein, 2004). The emergence and consolidation of espoused values and beliefs is largely brought about by social validation as certain values are confirmed by shared experiences. Such values become documented as values, norms, ideologies, and philosophies (Schein, 2004). Due to the espoused values being usable and succeeding in resolving challenges encountered by the group, they become transformed into non-discussible, sub-consciously held regimes of truth whose violation results in sanctions both within and outside the group.

According to Schein (2004) espoused values and beliefs are fundamental in understanding artefacts. Not only can they be directly correlated to observable enactments, they can also be used to interpret verbalised narratives. This capacity arises from *espoused theories* which predict how people will behave in certain situations which may be out of resonance with how they actually act in situations where those actions are warranted (Schein, 2004). In this regard espoused values and underlying assumptions can at times appear contradictory. To resolve possible contradictions, Schein (2004) posits that when analysing espoused values there is need to differentiate those that are congruent with underlying assumptions and those that may be superficial justifications or aspirations for the future. However, even after such analysis, Schein (2004) acknowledges the inadequacy of this level of meanings in capturing the full essence of a culture. He argues that espoused beliefs and values often leave large areas

of enactment unexplained as such overtures to decipher a culture must delve deeper for it is at this deeper level of understanding that patterns can be gleaned and future enactments predicted. This is the level of fundamental or basic assumptions described above as the nature of culture.

Schein's model was crucial in providing the analytical grounding for this study. Informed by Schein's analytical framework, researching UBYC nature and development from an organisational perspective extended to an exploration of other two organisations that were contingent on UBY enactments. Within this framework, NHS as a school was regarded a discrete cultural entity, hence an organisation. As the super-structure, NHS was the big group or organisation, in which UBY and life sciences teachers, as other organisations, were located. The second organisation was the life sciences teachers, they were a distinct group or cultural entity. It was my view that life sciences teachers were a group, hence an organisation, because they had been together for a long time, developed solutions to some challenges they had faced within the context of life sciences teaching, and through mentorship programmes at NHS, were passing on these solutions to new teachers and student teachers. In the above respects the teachers conformed to the mould of a group, hence were an organisation. The third organisation was the focus of this study, the UBY, in the life sciences classroom. They had been together at NHS for four years and in life sciences classrooms for almost two years, at the time of research. They conformed to all the aspects of groupness according to Schein, and as such they became the third organisation in this study. Cognisant of the importance of context in understanding and deciphering organisational culture, NHS and life sciences teachers were taken as the immediate organisation whose ramifications on UBY were contingent in the development of UBYC. Thus, in addressing the first research question, the context was restricted to NHS and life sciences teachers as it was my view that the structuring influence of these two organisations could have some influence on UBYC, which I endeavoured to understand and interpret.

The three organisations, informed by Schein's analytical frame, were studied at three levels: - the level of artefacts, espoused values and basic assumptions. Artefacts as suggested by Schein, (2004) were sought using multiple methods which included observation, narratives, archival material, interviews and co-generative dialoguing. Espoused values were solicited through document analysis for NHS and semi-structured interviews for life sciences teachers, co-generative dialogues for UBY and an unstructured interview with one UBY who appeared to be one of their leaders. As suggested by Schein (2004) through inductive inference life sciences teachers' and UBY assumptions were deciphered. I focused this deeper level of analysis on the life sciences classroom as was the scope of the study. NHS basic assumptions

had a broader bearing beyond the scope of this study and as such analysis of that organisation proceeded to espoused values. It was my view that analysis of NHS to the level of espoused values would buttress understandings of the life sciences classroom as the research setting. Thus, with regards to directing research, Schein's model provided a frame for the research approach, paradigm, methodology, data collection and analysis.

With regards to addressing the research questions, this analytical framework was instrumental in addressing the first and second research questions. Within the auspices of this framework, culture is a human construct in response to external contextual challenges. It was with this understanding that the context which fuelled the development of UBYC was explored. This was the essence of the first research question, which sought to capture the context in which UBYC developed. The instrumentality of Schein's model in deciphering UBYC basic tacit assumptions, addressed the second research question – what is the nature of UBYC as observed in life sciences classrooms at NHS, for according to Schein (2004) in the deciphered basic assumptions was UBYC. Even though the framework was stretched to address the first, third and fourth research question it would not adequately accommodate all the aspects that seemed pertinent in understanding the puzzling phenomena in life sciences classrooms at NHS. The third research question sought to explore how UBYC influenced the teaching and learning context in life sciences classrooms at NHS. The fourth and final research question sought to explain the teaching and learning context that had developed as a result of UBYC in life sciences classrooms at NHS. These aspects needed conceptual framing and the next sections of this chapter did so.

3.3 THE CONCEPTUAL FRAMEWORK

From what my colleagues had related to me, as captured in the prologue of this work, their experiences in their life sciences classrooms presented a less than ideal context for life sciences teaching and learning. They painted a picture of a context in which learners were not interested in learning; there were confrontations and conflict. This picture made explicit three context aspects that needed to be explored in order to better understand what was unfolding in life sciences classrooms at NHS. Three context aspects that emerged from the teachers' picture included learner interest, pedagogy and power. These context aspects needed to be framed for this study. Such framing was crucial in informing research design, methodology, data analysis, explanation and interpretation of the findings. Framing these three fragmented contextual aspects needed an integrated holistic analytical and conceptual framework through which the what, how and why of these aspects was to be coalesced. Such a framework I assumed would

sufficiently inform my exploration of the context in which UBYC developed, explore how UBYC influenced teaching and learning of life sciences and why UBYC influenced the latter in the way it did. I developed this integrated framework through invoking the concepts of intrinsic motivation, culturally relevant pedagogy and Bourdieu's and Foucault's social theory. I present and discuss these constructs and how they were used to frame this study below.

3.3.1 Intrinsic motivation

Motivation is that human variable that compels us to act or the human attribute underlying agency (Gredler, Broussard & Garrison, 2004). From a social cognitivist perspective motivation is a strong personal interest in a specific subject or activity (Linnebrink & Pintrich, 2002). As a process it involves goal-directed activity that is volitionally instigated and sustained (Valerio, 2012). Self-Determination Theory (Ryan & Deci, 2000) distinguishes extrinsic motivation, which refers to engagement in acts because they lead to desirable consequences separate from the activity, such as tangible rewards and intrinsic motivation, which refers to engagement in something because it is inherently interesting and enjoyable. The latter type of motivation is called enjoyment-based intrinsic motivation (Reinholt, 2006) "free choice" motivation (Ryan & Deci, 2000, p. 57). It is also termed effectance motivation, implying the inherent innate need to deal effectively with the environment in all active organisms. It is from this conceptualisation of motivation that engagement and disengagement as perceivable enactments are visible outcomes of motivation and amotivation, respectively. Amotivation in this case being the absence of the intentionality to act due to not valuing the activity, not feeling competent to do it, or not believing it will produce the expected results (Ryan & Deci, 2000). The notion here is that intrinsic motivation is an integral component of active organisms based on a need for self-determined competency. This notion, when theorised has been presented as the Self-Determination Theory (SDT), (Deci, 1980).

From a SDT perspective, intrinsic motivation as a construct encapsulates the natural inclination toward assimilation, mastery, spontaneous interest and exploration attributes critical for cognitive maturation and social development (Ryan & Deci, 2000). Intrinsic motivation is also associated with highly valued outcomes such as creativity, quality, spontaneity and vitality (Reinholt, 2006). In SDT the assumption of an active organism persists and self-determination involves choice and a deep-seated internal locus of causality (Ryan & Deci, 2000). The location of the locus of causality and the prevalence of choice in SDT resonates with that of Schein's agents, Bourdieu's idea of habitus and Foucault's notions of

power, to be presented later as part of this framework. Choice, habitus and power as related causal constructs in this study involve the selection of one option over other equally appealing available options (Deci & Ryan, 2000). This view was important in choosing the paradigm and research approach for this study as it was clear that the best place to start exploring and trying to understand overt human action was from accounts of people exhibiting the actions, for in them was the locus of the innate causality of the observed actions (Larson & Rusk, 2010).

Self-Determination Theory (SDT) captures the social and environmental factors critical for intrinsic motivation. The Cognitive Evaluation Theory (CET) which is a sub-theory of SDT identifies contextual factors that constitute variability in intrinsic motivation. CET constitutes the social and environmental factors as an oppositional duality of those that facilitate versus those that undermine intrinsic motivation (Ryan & Deci, 2000). The two theories converge on the postulation that interpersonal events and context structure facilitate or undermine intrinsic motivation. In educational settings, CET and SDT aspects are linked and support the view that the classroom environment can facilitate or forestall intrinsic motivation. The classroom structure or the cultural environment is thus an important factor in the pedagogic setting as it catalyses or undermines intrinsic motivation.

From a CET perspective contextual variables are universally perceived as either constrictors or facilitators of (Ryan & Deci, 2000) hence intrinsic motivation. Intrinsic motivation analytically foregrounds three universal psychological needs that need to be met for agents to be fully engaged, such include; *autonomy, competency and social relatedness* (Gagne` & Deci, 2005) or *autonomy, competency and connection* respectively (Larson & Rusk, 2010). The contextual amenability in addressing and meeting these three universal needs together with dispositions for culturally relevant pedagogy became the standard against which the context at NHS was examined vis-à-vis UBYC development.

The first research question sought to capture the context in which UBYC developed. According to Schein (2004) as already alluded to in sections above, culture is created as groups try to adapt to the challenges presented by their external environment as well as when individuals try to integrate. Connecting Schein's theory of culture creation with SDT I inferred that culture is created when groups try to reduce or eliminate psycho-social disequilibria caused by the three universal needs not being addressed. For me the ramification of this idea on researching culture, was that researching culture has to involve an evaluation of the context relative to its attendance to these three universal needs. According to Ryan and Deci (2000)

diminished functionality, such as that experienced by my colleagues, has to be explored in terms of the group's or individual's social context. Thus, frames from the theory of intrinsic motivation with understandings from Schein's theory implied the need to establish how the contextual structure at NHS on a macro-scale and in life sciences classrooms, as structured by life sciences teachers, on a micro-scale was attendant to UBY needs for autonomy, competency and social relatedness. The informing rationale for this being that it was only through addressing these three universal needs that agents were to become productively engaged in any activity.

A sense of autonomy or an "*internal perceived locus of causality*", choice, feelings of self-direction and feelings of volition facilitate intrinsic motivation (Ryan & Deci, 2000, p. 58). Autonomy as a need captures the human desire to present itself as the epicentre of their own actions whether in or outside a group. According to Ryan and Deci (2000) the human desire for autonomy needs to be addressed because it conduces feelings of ability. Through autonomy individuals are intrinsically motivated as long as they feel they are in control of their own progress, whether succeeding or failing (Eccles & Wigfield, 2002). Feelings of autonomy or acknowledgement of one's volition is associated with greater engagement, better performance, and higher quality learning (Larson & Rusk, 2010). It is from the need for autonomy or the internal perceived locus of causality and expression of volition that tangible rewards, threats, deadlines and competition pressure diminish intrinsic motivation (Ryan & Deci, 2000).

Research evidence suggests that youth levels of intrinsic motivation increase when learning contexts are structured in a manner that supports autonomy (Larson, & Rusk, 2010). Autonomy-supportive educational contexts enhance youth engagement, trigger their curiosity and sustain their tenacity to tackle challenging tasks (Lavigne, Vallerand & Miquelon, 2007). Conversely, highly structured educational contexts expunge youth initiative and tenacity in task mastery, hence reduce learning opportunities in educational settings (Larson & Rusk, 2010). Similar effects are observed when youth are given responsibilities or tasks beyond what they feel they can handle (Valerio, 2012). Thus, the degrees of autonomy, choice and control in the classroom significantly impact on youth intrinsic motivation as they significantly contribute to how youth feel about their ability to initiate and regulate their actions. The need for autonomy is not an isolate but is closely related to the need for competency.

Competency is associated with the desire to see oneself as able to make sound situational judgements (Larson & Rusk, 2010). Competency is associated with self-efficacy and self-worth

which are indicators of individuals' confidence in successful task engagement (Bandura, 1997). The desire to see oneself as competent is a catalyst for intrinsic motivation, not only in CET, but also in Achievement Goal Theory and Expectancy Value Theory (Larson & Rusk, 2010). The overarching tenet in all these theories is that individuals are inclined to be intrinsically motivated in contexts where there is a high probability for them experiencing success, which enhances their sense of competence. The need for competence facilitates intrinsic motivation because its satisfaction compels individuals to set goals, develop values and articulate life purposes (Valerio, 2012). By being in-charge of their life trajectory, through setting their goals and articulating life purposes, individuals are personally connected to activities and are inclined to be passionately engaged (Valerio, 2012). The notion advanced by Valerio (2012), is that personal connection with an activity catalyses intrinsic motivation because an individual feels s/he is the locus of causality and her/his actions are self-determined. In the context of teaching, the challenge is to connect tasks or activities with youth life purpose in order for them to identify with the task or activity and feel internally compelled to excel, as they try to affirm their competence (Valerio, 2012). According to SDT, when the context of teaching is structured in accordance with youth life purpose, learning becomes integrated in the self (Ryan & Deci, 2000) and can therefore be executed effectively and efficiently, as it is perceived as an integral part of exposing their competence. Structuring the context to better serve the youth is an indispensable ingredient in high school, considering that at this stage of development they are expected to thrive in a complex globalised context. The business of their lives faced with information overload and social issues they daily confront necessitates that they have an innate volition to soldier on; it is for this reason that their motivation is essential (Larson & Rusk, 2010). According to research scholars the deliberate structuring of contexts has to occur against a background of motivation to learn for its own sake being inversely related to development and aversion for challenging school tasks increases (Eccles & Roeser, 2009). Despite this decline and aversion for learning, youth engagement in tasks including learning has been observed to be enhanced by the activation of their intrinsic motivation (Larson & Rusk, 2010). It is from this notion that the essence of intrinsic motivation in the educational organisations is universally accepted.

What emerges from the concepts highlighted above is that learners need to believe they are competent in academic domains for them to be productively engaged in the school context. When the schooling context is not structured to address this need, learners attempt to maximise their self-worth and protect their sense of competence through causal attributions (Eccles &

Wigfield, 2002). Through causal attribution, learners engage in negative classroom enactments that reduce their learning opportunities as they attempt to avoid negative ability attributions for tasks they are not confident that they can perform in the pedagogic setting (Eccles & Wigfield, 2002). The idea is that individuals are motivated by an awareness of potential satisfaction and out of that awareness they make choices about what activities to engage in. This awareness of expected end-states is constituted by intrinsic and sub-conscious affective motives and real time needs (Reinholt, 2006).

The third universal need according to intrinsic motivation theory is social relatedness or the sense of connectedness. SDT postulates that whilst intrinsic motivation is located in individuals it is also external to individuals as it exists in relations between individuals and activities (Ryan & Deci, 2000). Resonating with organisational culture tenets, motivational theory views humans as social beings whose intrinsic motivation is catalysed when they perceive secure attachments with a context (Larson & Rusk, 2010). It therefore follows that perceived hostile social conditions undermine and curtail intrinsic motivation. In learning contexts, learners who perceive their teachers as hostile, cold and uncaring and all other euphemisms of hate, have low levels of intrinsic motivation (Valerio, 2012). Conversely, learning contexts characterised by mutual respect, a strong sense of being there for the others, absence of discrimination and the presence of a secure relational base, have been observed to enhance intrinsic motivation (Wlodkowski & Ginsberg, 1995).

The need for social relatedness is premised on three social preferences: reciprocity, inequity aversion and altruism (Fehr & Fischbacher, 2002). Reciprocity involves the alignment of agents' responses to external actions based on perceived social benefits. Kind actions or brusque attitude are reciprocated with kind actions or brusqueness respectively. In line with motivational theory in all interpersonal interactions responding individuals expect the development of a deep meaningful and mutually beneficial synergy. The second premise for social relatedness is inequity aversion. This is a preference for procedural justice or equity in resource allocation as well as equitable treatment that conforms to a certain benchmark. In inequity aversion the motivation is not based on some external material return but an implicit desire to be treated equally. In altruism, social relations are based on no external reward other than the pleasure of acting kind and the happiness that comes with it (Fehr & Fischbacher, 2002). In all three preferences, motivation is interactional or relational and the outcomes are both intrinsic and affective, depending on learner relatedness to the context. The need is for structuring contexts in ways that create impressions of relatedness. The importance of

controlling educational context in a facilitative manner is not only restricted to intrinsic motivation but also extends to externally motivated actions which may not necessarily be regarded as interesting or enjoyable (Valerio, 2012). In instances where the way in which the context structure is perceived as not enjoyable, social relatedness provides a rationale for participation and engagement (Valerio, 2012). Thus, in schools the facilitation of self-determined learning requires the creation of a context in which classroom conditions attend to the three basic human needs: support for the innate need for relatedness, maintenance of a sense of competence and respect for individual agency (Valerio, 2012).

Despite some direct implications for education in the discussion above, determinants of intrinsic motivation are complex and include: current ongoing realities, historical experiences and dispositions (Larson & Rusk, 2010). From these determinants intrinsic motivation is influenced by psychological, physiological and cultural factors. It is from this view that intrinsic motivation provides a natural wellspring of learning and achievement that can be systematically catalysed or undermined by the way the teacher structures the classroom context (Ryan & Deci, 2000). Motivation is thus inseparable from culture (Wlodkowski & Ginsberg, 1995). By having its locus in the domain of affect, the propensity to act (motivation) is socialised by culture. Tacit assumptions which are the essence of culture, constitute the internal logic that catalyses or undermines motivation (Wlodkowski & Ginsberg, 1995). From this notion I thus saw culture as the internal and inherent wellspring of motivation. It is from this understanding that theories of intrinsic motivation have been applied successfully in cross-cultural studies (Deci & Ryan, 1985). The inherent belief in these studies is that when elements of teaching are holistically harmonised with learner culture, they evoke, encourage and sustain learners' intrinsic motivation which is manifested in actions that maximise the learning opportunities for diverse learners. Thus, despite the intrinsic locus of motivation, tendencies associated with motivation and the propensities for enactments based on them are context-bound and dependent on temporal situational conditions (Valerio, 2012). Intrinsic motivation can therefore be catalysed, sustained and enhanced by structural conditions external to the individual. This view then serves to explain why there is variability in intrinsic motivation.

From the discussion of the three universal human needs and their educational implications, it emerged that contextual conditions that attend to these human needs are a necessity in education. The challenge that emerges from attempts to create the contextual conditions which would attend to the universal needs is how to structure pedagogy. Research indicates that there is no unitary pedagogical strategy that can engage all learners (Wlodkowski

& Ginsberg, 1995). In this study, from an organisational culture framework, for pedagogy to accommodate universal needs, it needed to accommodate and be responsive to culture. This notion warranted the framing of the pedagogical context in a way that foregrounded culture. It was at this point that I invoked culturally responsive pedagogy as part of my framework. The possibility of the creation of pedagogical contexts conscious of learner culture in order to invoke their intrinsic motivation is the essence of Culturally Relevant Pedagogy (Ladson-Billings, 1995), or what is functionally termed, Culturally Responsive Pedagogy (CRP) (Gay, 2010; Villegas & Lucas, 2002).

In the following section I present CRP as a part of the conceptual framework for this study. Invoking this conceptual framework in this study emanated from the view that a pre-established framework of teacher and pedagogical dispositions would serve to provide a standard against which teaching practices could be observed and analysed vis-à-vis their adequacy in accommodating UBYC and the creation of context that attended to UBY needs for autonomy, competency and connectedness. It was my view that such an analysis of observed dispositions subsumed within motivational theory would provide the context for understanding the production and reproduction of UBYC within life sciences classrooms at NHS. CRP thus provided and informed my understanding of what teaching ought to be in the life sciences classroom at NHS in the context of this study. CRP as an informing conceptual framework was also crucial in the interpretation of findings.

3.3.2 Understandings from Culturally Responsive Pedagogy

CRP accommodates learners' culture to make learning encounters more relevant to, and effective for them (Villegas & Luca, 2002). The rationale being that when the context of teaching foregrounds learner culture, it facilitates their intrinsic motivation. CRP proceeds from teachers getting to know their learners at a personal level, building instructional strategies around their learners' interests when possible, and using their learners' endowments as teaching tools (Bennet, 2015). As an instructional paradigm, CRP is guided by three propositions: learners need to experience academic success; learners need to maintain their cultural competence; and learners need to develop critical consciousness through which they may challenge socio-political injustice (Villegas & Lucas, 2002).

In order to plan for instruction under this paradigm, Villegas and Lucas (2002) proposed that teachers must be embodiments of certain specific characteristics or dispositions. These proposed dispositions provided this study with criteria for exploring how the context of

teaching was structured in life sciences classrooms at NHS. Villegas and Lucas' dispositions can be categorised under two broad groups, that is, socio-emotional and pedagogical dispositions.

Under socio-emotional dispositions, teachers who practice CRP are socio-culturally conscious. Through self-reflection and unbridled introspection, they understand their position in the present social, historical and political context. Through questioning their own attitudes, actions, worldviews, thought-patterns and beliefs, they come to terms with forms of discrimination which affect the pedagogic setting, hence their learners' intrinsic motivation. Such reflexivity also allows teachers who practice CRP to recognise their social identity and how it has been constructed and positioned relative to other agents (Villegas & Lucas, 2002). Such teachers hold positive affirming views of their learners' ability to achieve academic success and have an unshakeable faith in their potential to excel in school (Gay, 2010). As agents of social change these teachers actively work to remove barriers that hamper the creation of accommodative conditions for learning beneficial to all learners. Teachers who practise CRP do not shy away from issues of race and culture (Villegas & Lucas, 2002). Lastly, such teachers have a deep knowledge of their learners that goes beyond disciplinary or content knowledge or what the curriculum prescribes, but rather knowledge of one's learners as individuals (Gay, 2010). This knowledge is generated through fluid learner-teacher relationships and demonstrations of connectedness with all their learners. Drawing from learners' experiences these teachers represent knowledge in ways that make it meaningful for the learners. Thus, such teachers strive to build communities of learning in which learners volitionally learn collaboratively (Ladson-Billings, 1995).

Under the category of pedagogical dispositions, teachers who practice CRP adopt a constructivist approach in their instructional design endeavours. They build upon the varied lived experiences of all learners which tend to bring the curriculum to life (Gay, 2010). Through this approach these teachers provide platforms for learners to prove their academic competence, such platforms include modelling, scaffolding and clarification of challenging curricula (Villegas & Lucas, 2002). Such platforms establish and nurture co-operative learning environments and high agentic expectations (Johnson, 2010), contextual attributes which facilitate intrinsic motivation. Culturally responsive teachers also promote the development of positive ethnic and cultural identities by the learners in the classrooms. According to Johnson (2011) such culturally responsive teachers, through their pedagogy, encourage both cultural competence and critical consciousness. In encouraging cultural competence these teachers

reshape the prescribed curriculum and seize every opportunity to help learners be themselves. With regards to critical consciousness, such teachers foster their learners' ability to identify, understand, and critique societal issues and inequities. Through critical literacy, which involves exposing the mechanisms of power and devolving power to all agents in the field, they cultivate critical consciousness in their learners, which is an essential ingredient for self-determination. In their classrooms such teachers see knowledge building as reciprocal, in a pedagogic setting where learners who are intrinsically motivated play an active role in crafting and developing learning experiences for themselves and their peers. Such a pedagogic setting makes learning culturally relevant and intrinsically motivates all learners as they see themselves enacted within the curriculum.

The attributes of teachers who practise CRP as described above are observable enactments, an aspect which allowed their enlistment in observations and context analysis in this study. Thus, as used, CRP provided a productive framework for data collection, analysis and context evaluation. Due to its instrumentality in observing classroom practices and social relations, CRP provided a frame through which observation was conducted in this study. Through outlining what constituted sound pedagogy, and providing analytical standards, CRP tenets informed lesson observation schedule design. The research endeavour in context analysis thus became an exploration of how well disposed life sciences teachers were to UBYC. Observations from exploration of the context were evaluated against the baseline standards encapsulated in CRP tenets. This comparative evaluation was done in the development of the social imagery of the context, hence addressing the first research question. CRP as used in this way served as an analytical tool of how context may have contributed in the creation of UBYC. The latter frame served to answer the first research question. CRP was also instrumental in explaining the nature of UBYC, how and why it influenced life sciences teaching and learning. The instrumentality of CRP in explaining the what, how and why of UBYC served in addressing the second, third and fourth research questions.

In the sections above I presented concepts that I invoked in various stages of this study. The discussion on organisations, organisational culture, motivation and CRP foregrounded the possibility of studying cultures within complex organisations like diverse life sciences classrooms at NHS. The discussion also made observable actions and enactments the locus of culture. The centrality of the context in unravelling puzzling culturally-nuanced phenomena was also affirmed. It is from the latter point that framing the context became a analytical imperative, especially in light of the first, third and fourth research questions. As argued by

Smart (1998) the role of an interpretive researcher (this work fitted within an interpretive paradigm) is to rigorously construct social reality guided by established theory. As I tried to unravel and interpret the puzzling phenomena observed by my colleagues in life sciences classrooms at NHS, I needed a conceptual lens that would help me theorise what was unfolding. In the section that follows I present the social theory that informed this study. This social theory did not only constitute my philosophical orientations in this study but also informed the research design process and my methodology.

3.3.3. Social theory

The social theory that informed this study consisted of the works of Bourdieu and Foucault. My presentation of this social theory is segmented as I tried to present each theorist's ideas and how they were invoked in this study. I begin with Bourdieu and then Foucault's theory follows.

3.3.3.1 Understandings from Bourdieu

Bourdieu (1984) offers a social theory which foregrounds the interplay between organisational social structure and subjective personal dispositions. Bourdieu (1997) theorises this interplay by postulating three concepts: *field*, *capital* and *habitus*. Bourdieu (1997) encapsulates this interplay in his formula which he prescribes for studying social practice which is written as *habitus + capital + field = practice*.

Using Bourdieu's ideas, organisations as social systems are theorised as fields. A field is one of Bourdieu's metaphors for representing sites of cultural practice. Bourdieu and Wacquant (1992) describe a social field as a configuration of objective relations between positions objectively defined in their existence and in the determinations they impose upon their occupants in the structure of the distribution of power. For Bourdieu fields are spaces of competition in which there are inequities in access to whatever may be at stake in that competition (Rawolle & Lingard, 2008). This view is converse to the functionalist perspective which foregrounds the existence of harmonious values with culture being an integrating force. Bourdieu's view which affirms the systemic view does not equate culture with consensus and harmony. Rather this view advances the possibility and notion of organisations being complex and constituted by a mix of differentiated cultures. Social fields are thus an amalgam of social forces with the producers of these field forces being individual agents or collectives of agents. As a non-substantial construct a field can thus be conceived as a dynamic construction built from the practice and movement of agents as they confront each other with differentiated means

and ends according to their locations in the field (Bourdieu, 1998) the aim of confrontation being the conservation or transformation of the field to maintain the equilibrium of agents' power and influence.

From the conceptualisation of social fields above, Bourdieu (1993) suggests characteristic properties or a family of conditions that apply to organisations as social fields. He saw social fields as: structured spaces of positions; spaces with general laws or logics which guide interactions and orienting practices; characterised by social struggles for the forms of capital valued in it; and structured by power relations which produce distinctive patterns of strategies adopted by different agents, relative to their own positions and trajectories. For an agent to survive the forces of the field, s/he must have the *habitus* that orients him or her to the states, an aspect which perpetuates the social field. Bourdieu (1984) describes the *habitus* as, "both the generative principle of objectively classifiable judgements and the system of classification of practices" (p. 170), with the capacity to produce classifiable practices and works as well as differentiate and appreciate these practices and products that constitute the agents' life spaces. Bourdieu (1990) frames social spaces like NHS, or on a micro-scale the life sciences classroom as constituted by agentic individuals with *habitus* which represent dispositions expressed through artefacts such as ways of standing, speaking, walking, feeling and thinking. What emerges from Bourdieu's ideas on social structure is that *habitus* shapes the social world and in turn external social structures shape our world. Bourdieu's notion in this regard constitutes a duality consisting of *habitus* and *social structure*.

Krauss (2013) regards Bourdieu's *habitus* as communal. Krauss' postulation is that a class of people from similar social conditions like UBY tend to share the same system of dispositions and have the same class *habitus*. When located within the same social field (like life sciences classroom at NHS), agents' cultural schema is harmonised in accordance with the structured structures and structuring structures of the class *habitus* (Krauss, 2013). At this point I hasten to point out that even though regarded as communal, individual *habitus* still exist with varying degrees of variations from the communal *habitus* (Krauss, 2013). However, as this study was a group or organisational study I focused more on the collective *habitus*. According to Bourdieu and Passeron (1977), the collective *habitus* exists primarily due to the existence of collective needs through which the maintenance of some form of kinship is an imperative in the pursuance of protracted interests. Thus, the collective *habitus* is a product of strategies (conscious and unconscious) oriented towards the satisfaction of material and symbolic interests whilst anchored in a determinate set of economic and social conditions.

Bourdieu's social theory as outlined above was important in improving my social imagery. I use the term social imagery with regards to my conceptions about social relationships or patterns of relationships between different agents in a context. From theorising the life sciences as a social field what became crucial was the location of specific properties that allowed the description of relations between agents and served to locate the groups of agents, relative to one another. Observable agentic actions in the social field within Bourdieu's conceptual frame were reconstituted as observable practices. Thus, focus in research design and data collection had to focus on both teacher and UBY practices in the life sciences classroom. The thinking behind such a focus being that all players in the life sciences classroom were active beings endowed with cultural capital. Lastly, through Bourdieu's conceptual frame I managed to incorporate the position of the life sciences classroom as a dynamic conflicted structure constituted by improvisatory practices. Constituting the life sciences classroom in this way, provided an analytical tool for the exploration of the interrelationships and practices of agents within it, enabling the mapping of their *habitus*, a concept which overlapped with Schein's (2004) fundamental or basic assumptions.

Bourdieu's idea of capital and its operationalisation within the field provided a fresh perspective for analysis of discourse and dynamics in the life sciences classroom. The notion of capital provided an interpretive standard for observed practices. The idea of capital trading in the field was instrumental in the exploration of how different formative experiences such as race, ethnicity, history and many others shaped UBYC as observed in this field. The idea of capital also provided a standard against which the currency of observed practices was explored. The idea of capital through rendering currency to some practices also deprives utility from some practices. This dichotomy in the utility of capital served to frame observation and analysis. As argued by Schein (2004) it was impossible to describe all tacit assumptions of agents in the life sciences classroom, an exercise which Schein contends is both impossible and unproductive. From Schein's contention, conflated with the idea of capital, it became possible to focus on specific practices that appeared pertinent to the study. From this focused research engagement this study ceased to search for all aspects of UBYC, but only those I interpreted as significant in unravelling the puzzling phenomenon. It was within this frame, that during data collection I sought for learner and teacher practices that had cultural significance and would help unravel the puzzling phenomenon. From the notion of capital, I also focused on the nature of agents' capital, how they transacted and how their transactions influenced the life

sciences social field. This angle had an interpretive dimension which resonated with the aspirations of the third and fourth research questions.

Bourdieu's idea of the habitus analytically pointed to the existence of a practical knowledge from which agents drew their agency. This theory located knowledge about practices within agents in the study setting. In this regard the idea of habitus justified my method of participant recruitment. Through the idea of habitus, it was arguably clear that nobody knew the field and the nature of the UBY habitus better than those in the research setting. With this notion, in my participant recruitment knowledgeable agents had to be the life sciences teachers and UBY in grade eleven life sciences at NHS. In this regard Bourdieu's theory as applied in this study greatly enhanced the rigour of the study, as data came from the most knowledgeable and typical in the research context.

Bourdieu's idea of habitus was also invoked in data collection, analysis and theorising of findings. Acknowledging the internal locus and the collectivised nature of the habitus there was a need to develop responsive tools for its archaeological excavation. Such an excavation warranted a protracted yet extensive data collection regime. This data collection regime had to incorporate diverse strategies since habitus manifests in many ways. Thus, my methods had to capture data which was multi-dimensional but all aimed at making explicit the dispositions of UBY and the logic thereof. This was crucial since it was my view that to identify and explain the puzzling phenomena observed in social fields like NHS and the life sciences classrooms, this research could not afford to ignore the totality of the agents' being, that is, bodily incorporations (artefacts), social environments and an interrogation of underlying assumptions that oriented dispositions - *habitus*.

3.3.3.2 Understandings from Foucault

In chapter two I discussed and foregrounded power and the concept, culture of power. My persuasion in bringing issues of power in this study emanated from Schoenmakers' (2012) postulation that all social systems are power systems. According to Schoenmakers (2012) power is an inherent constitutive component of all social systems. From Schoenmakers postulation, it dawned on me that there was no way UBYC could be deciphered and explained without an interrogation or an interpretive analysis of how power was deployed and operationalised in life sciences classrooms at NHS. Whilst there is no consensus among scholars on the origin of power (Sadan, 2004) it was crucial that in this study, I explored in practical situations like the life sciences classroom how power was generated, invested and

exercised. It was for this reason that I needed a theory for power analysis. Such a conceptual frame I found in Foucault.

According to Foucault (1997) society cannot exist without power relations. It therefore follows that the privileged place to observe power in action is in inter-organisational relations or group relations. Foucault locates power in relationships and contends that power circulates as strategic enactments and not as a possession (Foucault, 1980). For Foucault (1997), power functions as a chain with agents being vehicles of power and not its points of application.

Foucault's (1997) view of power has the following features: it is impersonal or subjectless – it is not guided by the will of agents; it is relational - power is operationalised and made manifest in relations. It is not a quantum possessed by agents therefore not quantifiable; power is de-centred – it is not concentrated on a single individual or class; power is multi-directional – it does not flow from the more powerful to the less powerful, but it can come from anywhere in a relational network. Due to its multi-directional nature, power has a dynamic and intentionality of its own. Lastly, power is exercised and not held – thus it is not all important to measure or try to locate it (Foucault, 1997). Relations of power are distinguished from states of domination, whilst the latter immobilises, power relations are productive. Power produces deeply held regimes of truth (basic assumptions/ habitus), the individual and his knowledge, as well as resistance. Consequently, Foucault (1997) recommends that analyses of power have to interrogate how organisations deploy their power on other organisations and how the latter affirm their identity as well as resist the effects of power. For Foucault, power is co-extensive with resistance (Kelly, 2009) and any resistance to existing power relations confirms this power network whilst reaffirming its boundaries (Sadan, 2004).

Foucault's ideas, like Bourdieu's, were instrumental in providing the social imagery for this study. Foucault's ideas justified focus on the life sciences classrooms as locations to witness issues come alive via teacher-learner relationships. My analysis of power focused on how and why life sciences teachers and UBY exercised their power and how this deployment of power influenced the teaching and learning of grade eleven life sciences at NHS. This was another way I attempted to respond to research questions three and four. Through invoking Foucault's theory, during observation episodes in life sciences classrooms I had to take note of the relationship between UBY and their life sciences teachers. Based on Foucault's ideas, I had to capture forms of interactions in the life sciences classroom and their effects, as in such power was operationalised and made manifest.

The problem that arises from researching power is that social relations are dynamic and do not necessarily assume a particular form. Foucault proposes ideas that can be overlaid on the research setting and used to analyse relations and draw interpretations about power (Sadan, 2004). Foucault's ideas in this regard include relational aspects like: differentiation; objectives; realisation; degrees of institutionalisation and; rationalisation (Sadan, 2004). Using differentiation, exploration needs to examine distinctions made between participants. Invoking this idea meant that research had to focus on differentiating distinctions in the life sciences classrooms at NHS. Such an exploration according to Sadan (2004) needed also to evaluate the culpability of cultures in these distinctions.

The idea of objectives is premised on Foucault's (1997) notion that power is purposeful, and from this notion Sadan (2004) is of the view that power makes its goals explicit. The first research question sought to describe the context / field (Bourdieu, 1993) and the second question focused on the nature of UBYC. The inherent assumption from Foucault's ideas in framing these questions was that the field was a dynamic power play in which agents like UBY and their teachers, through their cultural capital engaged in displays of power. From this understanding an exploration of power within a Foucauldian framework thus needed to establish the functions that power was supposed to perform in the life sciences classroom. What gains or advantages were the organisations (teachers, UBY) interested in achieving? What privilege did it afford the organisations? Addressing these questions influenced methodology; data analysis and answered the third and fourth research questions.

Foucault's idea of realisation conceptualises the technology of power (Foucault, 1997), or the observable mechanisms of how power is deployed or realised. According to Sadan (2004) Foucault's idea of realisation frames research design towards identifying technologies of power and mechanisms of authority in use. Specifically, research needs to unravel mechanisms by which authority is expressed, instituted and enforced. The idea of realisation resonates with another of Foucault's ideas, that of rationalisation. Rationalisation as an analytical precept acknowledges the complexity of power as an organised hence rational construct. Due to its rationality, exercise of power is contextually operationalised. Thus, research has to unravel the rationality of the exercise of power. Research has to examine the forces that agents are subjected to; how control and supervision is exercised; the methods of surveillance and the nature of rules. Research in search of rationality has to assess the effectiveness of the tools available to power; how the mechanisms of power deployment contribute to the realisation of the objectives of power and carry out a cost-benefit analysis of

the exercise of power. Unravelling these aspects about the organisation serves to make explicit the context of power in culture evolution.

From the idea of the *panopticon* (Simon, 2002, p. 3) Foucault argues that power in institutions or socio-political entities like the school is no longer for oppression but for regularity through self-disciplination (Rouse, 2005). To get to self-disciplination, power undergoes a two-stage development: initially it functions as a means eliminating society's deviants and then it evolves into techniques for enhancing the utility and productivity of those subjected to the techniques of power (Rouse, 2005). This institutionalisation of power or as Foucault calls it, normalisation produces new populations - a concept used by Foucault to denote groups of people who are not subjects but entities with peculiar variables and social niches (Rouse, 2005). Normalisation produces a whole range of degrees of normalcy, an aspect which individualises populations and made the exploration of organisations within organisations possible. Foucault proposes that forms of power be investigated through an exploration of degrees of institutionalisation through its four processes: individuation of space; coding of activities; routinisation of activities and; synchronisation of activities (Sadan, 2004).

According to Balan (2010) individuation of private space occurs when physical space is allotted to individuals in a social field. Allotment of space is not random, as it is done to enhance the disciplinary gaze (Balan, 2010). Whilst in medieval Europe spatial disposition was attained through the prison or the sanatorium, Foucault contends that in this modern age it is attained by other means like individuation of space which is brought about by segregation into heterogeneous groups or the protracted targeting to techniques of power (Balan, 2010). The thrust of the deployment of techniques of power is to create in individuals an awareness of their place in the general economy of space in a social field in light of disciplinary power. According to Sadan (2004), when these ideas are superimposed on a research context, the research endeavour becomes to explore and document how space is allocated, the criteria for allocation and how the allocation influences practices in the context.

Institutionalisation of power occurs through controlling or coding of activities (Balan, 2010). Explaining Foucault's notion of institutionalisation in this regard, Balan (2010) posits that no longer is the individual's body used for wealth and goods as it is tantamount to slavery. Institutionalisation of power through coding of activities now seeks to use the individual's body to get time and work. The body's time is extracted through policy interventions that prescribe rigorous activities, strict itineraries and controlled movements that are synchronised with those

of an object (Balan, 2010). Disciplination in this way results in the routinisation of activities, through which certain acts become entrenched in institutions as a means of expansion of power and technique of surveillance. When this idea is overlaid on research, it frames data collection towards those activities and instruments that seem to prescribe social conduct in organisations. Research needs to capture what is considered normal and the mechanisms of routinisation.

According to Balan (2010) the last idea that can be used to research power according to Foucault is that of synchronisation of activities. This idea is premised on Foucault's notion that discipline or normalisation is established through tactics that are a product of various coalesced forces whose combination is carefully calculated (Balan, 2010). Implicit in this notion is the view that disciplinary power enforces a general rationalised specialisation which attempts to integrate all parts of an institution. Normalisation in this processes strives to instil within the individual automatic obedience to the larger institution's bidding. According to Sadan (2004) when this process of normalisation peaks, individuals volitionally comply with the promptings of the institutions they are part of. To get to this stage of institutionalisation or as Sadan (2004) calls it, automatic docility, power technologies are deployed.

Foucault's theory as outlined above was important in framing this study in terms of my social imagery. Framing this study with Foucault's concepts, power assumed multiple forms, hence could be observed in myriad ways. It could be observed in "face to face exchanges, intimate judgements and in procedures of teaching and learning" (Collins & Blot, 2003, p. 46). Foucault's frame opened up the possibility of exploring minute and subtle dimensions of power which were constitutive of the research context. Descriptions of these dimensions of power formed part of my response to the first questions – what is the context in which UBYC develops? Later on as I tried to answer the fourth research question – why does UBYC influence teaching and learning in the way it does, Foucault's concepts helped in the theorisation of the puzzling phenomenon. Lastly, Foucault's suggested ways of researching power exposed me to subversive modes of observation and text reading. In the reading of archival material, the hermeneutic stance I adopted within this frame was invaluable. In the posture framed by Foucault's concepts I tried to discover the covert tactics and technologies of power at work in life sciences classrooms at NHS. Insights stemming from this exercise were invaluable in interpretation and addressing all the research questions.

3.4 THE ANALYTICAL AND CONCEPTUAL FRAMEWORKS MODEL

Below, I present in graphical form the frameworks as used in this study. In this diagram I visually present the linkages between the various ideas and how they fed into each other whilst informing research design as well as the interpretation and theorising of findings. These constructs provided the ideas and grounds within which this study was anchored and revolved around. As indicated below, this framework provides a kaleidoscope of how I perceived the research context, and how I proceeded to answer the research questions.

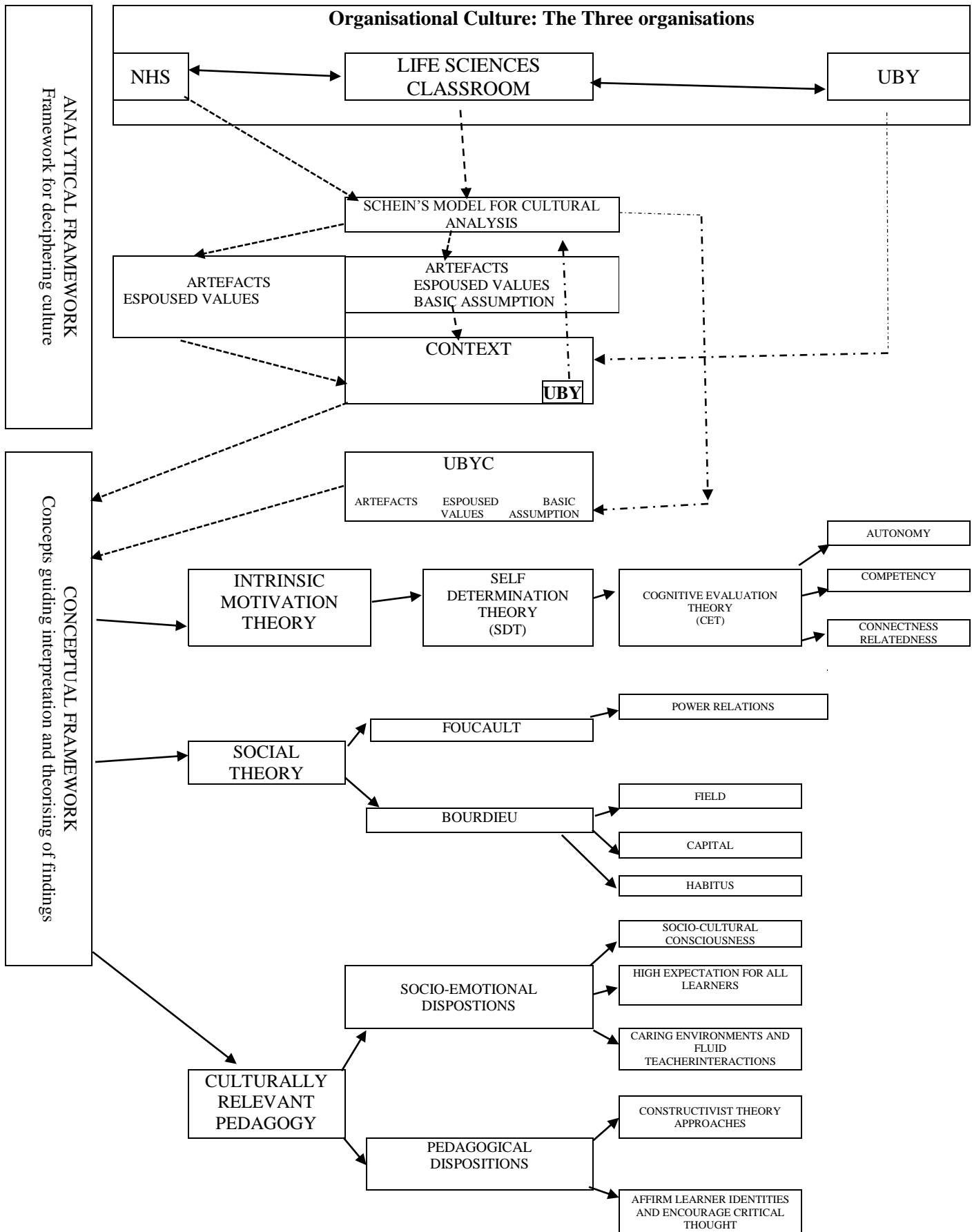


Figure 3.3 Diagram showing the frameworks used in this study.

3.5 CONCLUSION

In this chapter I attempted to provide structure and analytical support for the work I undertook. I have presented various theories and concepts that I regarded as crucial in buttressing this work. Through Schein's work I found anchorage for cultural analysis and in concepts that ranged from intrinsic motivation, CRP as well the social imagery from Bourdieu and Foucault, my analytical lens was sharpened and my interpretations were fleshed. The coalescing of these frames throughout this study gave direction and consistently sustained resonance throughout this work.

The frameworks above provided a fresh lens for observing and interrogating dynamics in the life sciences classroom at NHS. Ideas from motivational theory, culturally responsive pedagogy, Bourdieu, Foucault and organisational culture scaffolded my analytical and exploratory aspirations in the context of life sciences at NHS. This framework as a philosophical foundation improved my understanding of the life sciences classrooms and their dynamism. Through this understanding, exploration and analysis ceased to be linear, but instead became a quest to explore the dynamic interactions between agentic parties who were not self-referential actors situated in isolation. My research focus therefore placed more emphasis on the relational and interactive which assisted me in approaching the life sciences classrooms at NHS, and in unravelling the puzzling phenomenon.

In the following chapter (chapter four), I deal with the methodological aspects of this study. In it I explore how this study was conducted, providing the empirical grounding for each methodological aspect.

CHAPTER FOUR

RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

Whilst undertaking this study I was of the view that educational research entailed exploring and understanding social phenomena in the context of education. This chapter provides an outline of how this study was conducted. The chapter through the research paradigm presents the philosophical underpinnings that informed this study; through the research approach it oriented and delimited the study; and through the presentation of the research design and methodology I tackle the questions and methods that enabled the satisfactory exploration of targeted phenomenon and to some extent buttressed the utility of results emanating from this exploration.

I begin this chapter by restating the research questions that this study sought to address which were:

1. What is the context in which urban Black youth culture develops at NHS?
2. What is the nature of urban Black youth culture, as observed in life sciences classrooms at NHS?
3. How do aspects of urban Black youth culture influence the teaching and learning of life sciences in life sciences classrooms at NHS?
4. Why does urban Black youth culture influence the teaching and learning of life sciences in transforming life sciences classrooms at NHS in the way it does?

My intention in this thesis as captured by my research questions was to explore the nature and ways in which UBYC was related to life sciences education at NHS. Informed by my analytical and conceptual frameworks as illustrated in figure 4.1 below I was aware of the depth of exploration I was embarking on.

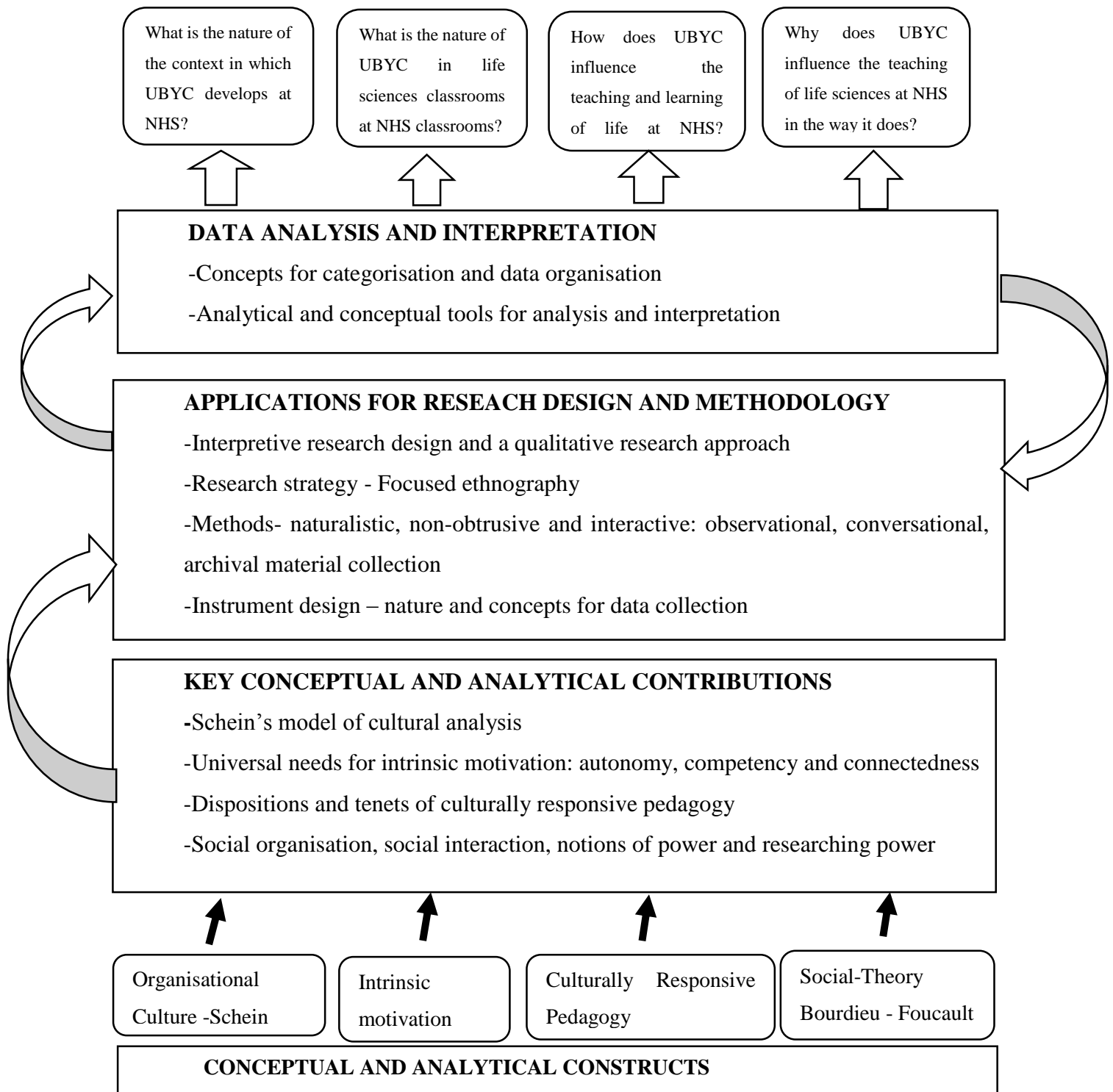


Figure 4.1 Frameworks and the research process

From the connection between the frameworks and the research design and methodology it was clear that understanding and explaining the puzzling phenomenon witnessed by my colleagues in the grade eleven life sciences classrooms warranted a delving beyond observable enactments to underlying structures that organised and orientated social life within life sciences classrooms. Mindful of this endeavour I framed this study, its methods and methodology without any assumption or illusion on the hidden nature of this understanding as embodied in the fundamental assumptions which I needed to excavate.

I begin this chapter with a discussion of the research paradigm which served to frame the content and scope of the sections that follow. I then proceed to explore the research approach adopted for this study. The research paradigm and the research approach were crucial in informing data collection and strategies adopted for analysis. After presenting the research paradigm and approach, I proceed to break the research design process into smaller components of what I considered critical parameters for this study.

4.2 THE RESEARCH PARADIGM

Framing the exploration of the life sciences classroom began by locating the whole explorative endeavour within a paradigm. A paradigm is defined by Cohen, Manion and Morrison (2011) as assumptions guiding decisions, actions and interpretations. Three areas of research which need assumptions to be framed are *ontology* (nature of reality), *epistemology* (nature of knowledge) and *methodology* (method to knowledge) (Thanh & Thanh, 2015). In settling for this study's paradigm, in the coming paragraphs I lay out my beliefs and assumptions about reality and the essence of knowledge and methodology as informed by my analytical framework in the previous chapter.

Ontology deals with the nature of reality and what we can know about it. From motivational theory and Bourdieu's concepts I held the notion that human beings are agentic, purposeful, perceptive and able to evaluate and comment on their agency and experience. From my analytical and conceptual frameworks it was my belief that reality was a human construct premised on subjective experiencing of the environment external to the being. With a strong belief in historicity and its dynamic symbiosis with the present, I took a historical realist position and regarded reality as a subjective construct influenced by socio-political cum cultural factors that coalesced and became reified into extant social structure in distinct context. With this view I held the notion that the puzzling reality I was researching and exploring was

not an isolated phenomena but an amalgam of many complex dynamically interacting variables of the life sciences context.

Epistemology can be regarded as the theory of knowledge. I was of the view that the locus of knowledge was the individuals and resultantly that knowledge rendered those individuals dominant forces within the social structure. From my frameworks I assumed knowledge to be both subjective and transactional. From motivational theory agents have the capacity to interpret stimuli and from an organisational culture perspective they can have collective interpretations. Through organisational interactions knowledge is also produced and reproduced. It was my notion going into this study that what I knew and what is known depended to a large extent on interactions and relationships.

For me *methodology* was about how knowledge about a context was acquired (Chowdhury, 2014). Through regarding knowledge as subjective and transactional as alluded by my epistemological notions, it became my view that methodology had to be dialogic. It was my belief that any external explanation of social phenomena that ignored the agents' ontology and epistemology was a futile venture in establishing the truth about a context. Meaningfully gaining knowledge about NHS, UBY and the life sciences teachers had to proceed through dialogues and freer communicative platforms that accommodated the multiplicity of social experiences. Thus knowledge and knowledge generation in this study was approached as social, situated, subjective, interested and historical with meaning emanating from interpretations of this subjective knowledge.

My ontology, epistemology and methodology placed this work within a loose aggregate of approaches termed the interpretive paradigm (Walsham, 2006). Key postulates of interpretivism include: humans consciously acting and their actions are endowed with meaning; meaning is based on experience and context; meanings imposed on the natural and social world are based on subjective categorisation and organisation of experiences; due to individual difference meanings ascribed to experiences are subjective and multiple; and interpretation of meaning constitutes reality and truth; (Chowdhury, 2014; Smart, 1998; Thanh and Thanh, 2015; & Walsham, 2006).

Ontologically interpretivism is constructive (Goldkuhl, 2012). Interpretive ontological axioms stress that the social world is not rationally given, but rather embedded in constructed social meanings, social processes and social contexts. Reality for interpretivists is thus produced and reinforced by agents as they act and interact with other agents. From this

ontological perspective the world for interpretivists is in social relationships or organisations. With this understanding the purpose of research within an interpretive paradigm is to understand through interpretation how agents or groups of agents/organisation through their engagement in the social processes like education, enact their meaning-endowed realities (Goldkuhl, 2012). Through stressing meanings, interpretivism conforms to its founding traditions of hermeneutics and phenomenology which emphasise searching for meanings and discovering expressed essential characteristics of observed phenomena respectively (Chowdhury, 2014).

According to Goldkuhl (2012) ontology and epistemology are intricately intertwined because knowledge is constituted and constitutes ontological assumptions. Interpretivists use the Weberian term “*verstehen*” (Chowdhury, 2014, p. 435), to express the spirit and pursuit of interpretivism. The German term *verstehen* denotes to understand, perceive, know, cognition, a holistic capture and comprehension of the essence and significance of observed phenomena (Schwandt, 2005). Linked to *verstehen* is the notion that understanding and explaining agency and enactments requires an understanding of the social processes and context in which the agents are immersed (Schwandt, 2005). *Verstehen* allows the interpretation of observed social actions through unravelling the meanings which constitute the actions or the context in which the actions are embedded. From this notion Schwandt (2005) posits that within an interpretive research framework the purpose of *verstehen* is to enable the inquirer to make sense of the cultural assumptions that constitute agentic enactments. *Verstehen* enables the inquirer to delve deeper into the webs of meaning that agents have spun to access the assumptions located in the subjective subconscious of the agents. Going beyond the actions achieving *verstehen* makes it incumbent upon the inquirer to assume empathetic positionality relative to an agent(s) which will enable him to interpret enactments more meaningfully within webs of meanings (Chowdhury, 2014). What emerges from the preceding discussion is that holistic understanding or *verstehen* is an infallible precondition for deciphering and interpreting of meanings imposed by agents on socio-cultural contexts. Implied here is the notion that knowledge of and about social life is second-order character and to access it the researcher has to decipher through *verstehen* the knowledge and meanings imposed by the actors (Goldkuhl, 2012). Thus, within interpretivism researchers proceed with a mindset attuned to the existence of a social world imbued with meaning. With this mindset the researcher’s work is reconstructive and to use the produced knowledge about social phenomena as building blocks of theory (Goldkuhl, 2012).

In this case *verstehen* is a cognitive state or epistemological view that enables cultural analysis and interpretation as argued by Smart (1998, p. 113):

Believing ... that man is an animal, suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretive one in search of meaning...to aid us in gaining access to the world in which our subjects live.

Verstehen is also important in an interpretive framework when it is conceptualised as a process instrumental in understanding complex socio-cultural contexts or social systems (Goldkuhl, 2012). *Verstehen* as a complex process is instrumental for interpretive intersubjectivity. In this way it is viewed as an active process through which agents make meaning of their enactments and enactments of those they interact with (Chowdhury, 2014). Secondly, it can be regarded as a process through which inquirers in social systems, through empathetic identification, grasp primary subjective consciousness or the wellspring of agentic motivation (Schwandt, 2005). With the second way interpretivists posit that *verstehen* as a process enables the inquirer to swim in the agents' experiences in a way that allows the reconstruction of their self understandings as they act in specific contexts (Chowdhury, 2014). Lastly, *verstehen* is a hermeneutic process: hermeneutics here goes beyond text analysis but all forms of interpretation inclusive of verbal and non-verbal communications. As a hermeneutic process *verstehen* makes interpretivism as a paradigm anti-foundationalist in that inquiry becomes subjective, whilst embracing the idea of objectively researching human action, unlimited by notions of the ideal-type and the pressures of theory conformity (Thanh & Thanh, 2015).

The notion of subjectivity within the interpretive paradigm applies to all actors in a context. In a research context it applies to the researcher as well as all the participants. For interpretivists, research is meaning making aimed at comprehensive knowledge production about a situation or phenomena in context. In research, interpretivists contend that the researcher is faced with myriad complex, interwoven, knotted, inexplicit, and superimposed and often times strange social constructs which he is supposed to configure and interpret (Smart, 1998). To render meaning to his research experiences the researcher depends on two concepts which Geertz (1973) referred to as the experience-near and experience-distant. The experience-near is what the participants use to define and interpret and readily understand. The experience-distant is what the researcher uses to advance their research, philosophical and practical aims (Smart, 1998). The responsibility of the researcher within an interpretive paradigm is to capture the participants' experience-near constructs and connect them to established theory in order to construct the architecture of social reality and make

interpretations about social reality (Smart, 1998). It is important to note that within this paradigm interpretation is subjective, hence may be tainted by the researchers' socio-historical biases and deep-seated assumptions. For interpretivists this possibility is not problematic as they contend that "to understand is to understand differently" (Chowdhury, 2014, p. 436). The implication of this statement is that it is impossible to interpret objectively, as what things say is ever evolving and also are the researcher's prejudices and prejudgements (Chowdhury, 2014). It is for this reason that interpretivism pursues understanding from the subjective experiences of individuals, researchers included. Researcher prejudicial distortions are curbed by encouraging the researcher to declare their positionality through which the researcher engages with his biases and prejudices prior to interpretation (Bourdieu, 1993). Bias is further curtailed in interpretivism because for interpretivists meaning is negotiated, hence notions of static interpretations are regarded as erroneous. Thus, for interpretivists interpretations are a mutually reinforcing network of understanding iteratively generated by all in a research context (Smart, 1998).

Cognisant of the dynamism of social horizons and the inherent meaning in things interpretivists advocate for meaning-oriented methodologies premised on subjective interactions (Reeves & Hedberg, 2003). Interpretivists rely and promote the use of those methods that penetrate into the domain of affect and tacit assumptions to facilitate an understanding of social interactions and the constitution of social reality (Thanh & Thanh, 2015). Such an approach generates convergent data as it involves soliciting and capturing shared perspectives among multiply-connected individuals (Smart, 1998).

From an interpretive ontological, epistemological and methodological understanding this work proceeded with three key informing focal elements. Firstly, I strived to make it people-centred because reality is socially constructed and can only be made meaningful by those in that social context (Cohen, Manion & Morrison, 2011). Recognising the intricate connection between agents and their knowledge it was my view that this study had to be informed and respond to experiences and realities of the participants in the research context. Understanding the puzzling phenomena observed by my colleagues within an interpretive paradigm implied excavating the subjective meanings at the heart of the phenomena. This excavation had to follow multiple routes, use multiple methods and engage multiple agents within the life sciences context at NHS. Secondly, acknowledging the knowledgeability of agents as posited by interpretivist and equating knowledge with power (Foucault, 1980), this study had to be power-conscious. Being power-conscious implied interrogating the deployment of power by

various agents in the life sciences classroom context and also within the context of NHS. Believing that knowledge is power, this study thus became an exercise in knowledge generation and hence was an empowering venture.

Within an interpretive framework this research was able to challenge the notion of the science classroom as objectively-nuanced *fields* and opened it up to include many perspectives and understandings. Within this paradigm life sciences classrooms became *fields*, or human spaces shaped by cultures and context specific realities. With this notion it followed that grasping classroom realities needed to proceed beyond imposed theory and dominant discourses of meaning to human-made explanations in context. Such a perspective counters hegemonic notions which for example hypothesise that some groups of learners fail in science classrooms because they fail to grasp objective truths (Basu & Barton, 2007). Conversely, the interpretive paradigm enabled the opening up of the life sciences context at NHS to unbounded exploration, beyond established webs of meaning, to unravel through accommodating multiple views. Therefore, instead of simply viewing and blindly embracing my colleagues' notions that UBY were a challenge and not normal, within an interpretive paradigm I explored whether the context was complicit in the development of the observed phenomena. This was the scope and essence of the first research question. Through an accommodation of multiple realities and achieving *verstehen* my research responsibility within an interpretive frame became to gain knowledge about the social world in the grade eleven life sciences classroom at NHS and how it constituted the observed puzzling phenomena. Relating this research responsibility to my analytical framework implied an exploration of engagements in life sciences classrooms with regards to how they sufficed in facilitating UBY intrinsic motivation.

Within an interpretive frame, research had to be dialogic (Emdin, 2010). There was need to engage in dialogue with life sciences teachers and UBY in context. This dialogue aimed at *verstehen* had to question existing knowledge of and about the participant within a dynamism that centred social meaning, social interactive processes and criticality of social context. According to Cohen et al. (2011) when we engage in such dialogues with our participants and carefully consider what they have to say about their experiences then our task ceases to be a mere generation of descriptive narratives but to frame these problems in a larger socio-political context. The scholars argue that it is only when interpretations are made in a larger socio-political context that research becomes meaningful and relevant. Thus, the interpretive paradigm provided a more transactional and subjectivist framework under which I as the researcher, my colleagues - the life sciences teachers and UBY became interactively linked in

unknotting the complex and strange phenomena that had unfolded in grade eleven life sciences classes at NHS.

4.3 THE RESEARCH APPROACH

Researchers contend that the interpretivist paradigm uses a qualitative research approach (Denzin & Lincoln, 2005). A multiplicity of definitions of qualitative research exist, each emphasising a particular perspective. Some scholars emphasise its purpose and focus, for example Merriam (2009) regards qualitative research as a research approach poised at understanding the meanings people have constructed and have made sense of the totality of their experiences in the world. Emphasising an epistemological stance, Parkinson and Drislane (2011) present qualitative research as an approach that employs multiple subjective data collection methods and produces narratives and descriptive accounts of a setting or practice. Denzin and Lincoln (2005) focus on the process and context in conceptualising qualitative research. They view it as a set of interpretive, naturalistic and material practices that make the world visible through the lens of a locally situated observer.

According to Thanh and Thanh (2015) the connection between the qualitative research approach and interpretivism lies in the approach being able to generate copious amounts of rich contextually-grounded data necessary for making interpretations. For Thanh and Thanh (2015) an appropriate research approach for interpretivists is one that enables them to explore in-depth the synergy between agents and their environment as well as the role of agents in the creation of the social realities they are part of. This capacity of the qualitative approach is premised in its characteristics as propounded by Marguerite, Dean and Katherine (2006): research is done in naturalistic context; participants are selected using non-statistical methods but based on their knowledge of the context; data collection methods are highly dialogic and interactive; and researchers collect data through attentiveness and being in close contact with the participants. With these attributes the qualitative research approach was regarded and invoked in this study. It was adopted for this study as it seemed adequate in providing insights into the experiences of agents in any context in a manner that facilitates a deeper perception of their experiences without any detachment from their natural setting (Thanh & Thanh, 2015).

The analytical aspiration of qualitative research is the excavation of meaning in natural contexts without objective rationalisations. This analytical base tallied with my research agenda which was to decipher the puzzling phenomena observed by my colleagues in the life sciences classrooms in situ. Deciphering meanings inherent in these phenomena required an

approach that explored the context beyond the limits of rationalised reality. Going beyond the limits of rationalised social reality entailed breaking with the positivist view that there is logic in human practice which could be deciphered by an impartial researcher (Thanh & Thanh, 2015). Informed by interpretivism and tenets of the qualitative research approach, it became my view that there was logic in human practice which could be dialogically solicited and interpreted. Foucault (1980) argues the significance of focusing on this logic and posits that it is more important than theory. He therefore urges research to be more interested in analysing historically situated situations like the mCs context to determine ways in which discourses have been formed and are sustained. The qualitative approach afforded me the ability to delve beyond the limits of rationalised social reality and circumvent the danger of in-putting logic in the agents' enactments.

By virtue of its exploratory nature the qualitative approach proved sufficient in addressing the *what*, *how* and *why* questions of this research. Due to its facility to examine participants' views in depth, the qualitative approach proved to be a unique tool for studying what lay behind, or underpinned observed artefacts. This proved useful in allowing associations that occurred in participants' thinking or acting to be identified which in turn pointed to some explanatory links. These associations enabled the identification of influences that underlay enactments, for example, what was the context and how it contributed to the development of observed actions? What influenced teachers structuring of life sciences classrooms at NHS? Why the perceived puzzling phenomena occurred in life sciences classrooms at NHS? This struck at the heart of my analytical intentions. For me it was not adequate just to describe UBY according to the dominant deficit narrative as would have been likely within a rational objective approach. I needed to approach what had been presented to me with an open mind and the willingness to engage with all involved in this context to make sound interpretations of what was unfolding. I was of the view that participants were, in Bourdieu's (1990) terms, playing different games. Of interest to me going into this research was what type of games; what were the ends, unintended outcomes of these games; and what were the implications of these games on life sciences teaching and learning opportunities? These were the intriguing questions that needed to be approached and addressed. The qualitative approach seemed endowed with the capacity to address them.

The adoption of a qualitative approach for this study did not only provide for the investigation of phenomena in their natural settings but also provided data which was an enactment of naturally occurring social enactments. This was invaluable because enactments

and social interactions (acted, spoken or written) had to be understood in a real setting so that the puzzling phenomena could be deciphered and interpreted. This aspect is confirmed by Lewis and Ritchie (2003) who posit that a qualitative approach is handy as it provides for the investigation of enactments which may have some of their elements being sub-conscious or instinctive. By tracing the processes that have contributed to differing participants' experiences and through collecting their own explanations of what was happening to them, the qualitative approach had the potential to enable me to understand why life sciences teachers and UBY conducted themselves as they did in life sciences classrooms at NHS through qualitative non-ordinal data.

The above discussion outlined the research approach adopted for this study and highlighted its instrumentality in unravelling the social reality that was playing out in life sciences classrooms at NHS.

4.4 RESEARCH STRATEGY

In this study my understanding of methodology was informed by Carter and Little (2007). For these scholars the aim of methodology is to describe, explain, justify and analyse the methods used in research. Methodology as a body of knowledge provides guidelines on how research should proceed or can be crudely described as orientation to inquiry.

Orientation to inquiry or methodology is influenced by three important aspects. Firstly, it arises from the formal theories associated with specific academic disciplines. Secondly, methodologies arise from the nature of objectives, research questions as well as levels of analysis and interpretation of findings. Lastly, orientation of inquiry is influenced by the manner in which empirical work is to be conducted or the study is to be designed (Chamaz, 2004). With regards to the first aspect, this study arose and was anchored in formal theories from disciplines such as sociology, anthropology, politics, education, philosophy and other social sciences. With regards to the second aspect, through the research objectives and questions my interest lay in the exploration of the nature, operation and influence of UBY cultural structures on life sciences teaching and learning. Such overtures pointed to the need for a design (last aspect) that could cope with the natural and emerging rather than blindly embracing essentialised and reified truths. It was my view that the scope of my methodology had to be located within the dynamism of everyday reality. Oriented this way the methodology would coincide with my interpretive priorities that centred the social nature and origin of human interaction and practices. My methodology had to be premised on the assumption that

agents were knowledgeable, autonomous actors who constituted and were constituted by their constructions. A methodology that readily matched this mould for me turned out to be focused ethnography (Cruz & Higginbottom, 2013; Knoblauch, 2005; Morse & Richards, 2002).

Focused ethnography is an evolved form of classical ethnography. This evolution from classical ethnography has arisen from reflections on the processes and purposes of the research, new kinds of questions and new reasons for undertaking ethnographic studies (Wall, 2015). According to Cruz and Higginbottom (2013) the last decades have witnessed a shift in social sciences research towards methodologies that accommodated peoples' experiences and realities as constructed from their subjective understandings. In line with this shift, methodologies in social research now emphasise learning about people from the people concerned in context (Higginbottom, Pillay & Boadu, 2013). It is from these understandings that focused ethnography emerged as a viable, pragmatic methodology in exploring distinct issues or communal experiences in specific social settings. Despite its under-specification in social science research, focused ethnography is emerging as an innovative and responsive methodology in contexts where typical prolonged ethnographic engagement is not feasible. However, to fully appreciate the viability of focused ethnography an understanding of classical ethnography (ethnography) is crucial.

Ethnography is an interpretive form of social research which is descriptive in nature and rooted in the fieldwork associated with Boasian cultural anthropology. According to Hammersley (1992) ethnography is a discipline concerned with the study of people's behaviour in their natural, normal environment. From a functional perspective Schwandt (2007) regards ethnography as the process and associated outcomes of describing cultural behaviour. Roper and Shapira (2000) view ethnography as a data collection technique involving learning about people with the researched people serving as the primary source of data. It is an art and science of describing human collectivity in diverse contexts that culminates in a written description of particular aspects of their livelihood and common sense about their world (Wall, 2015). In all these forms and descriptions, ethnographies are conducted by researchers unfamiliar with the cultural settings who enter and proceed without pre-defined questions other than to gain an in-depth understanding of a specific culture (Wall, 2015). This deep understanding is brought about by the deployment of multiple data-collecting methods which include participant observation, interviews and documentary analysis (Fetterman, 2010). To facilitate this deep understanding, ethnographers are engaged in long-term field visits, an attribute phenomenon Fetterman (2010) describes as cultural immersion over an extended period of time. From

highlighted attributes and characterisations of ethnography above Higginbottom et al. (2013), coalesced characteristics shared by all ethnographies: scrutiny of context-bound social phenomena; elicitation of qualitative, non-ordinal data; non-statistical sampling techniques; thick-descriptions as the product of analytic interpretations; and centring the significance and importance of human agency in interpretation. On the latter aspect ethnographies rest on the experiential authority of the researcher, based on the assumption that the researcher is an authority on other peoples' way of life due to their prolonged cultural immersion in other peoples' context.

The contemporary understanding of ethnography outlined above has shaped many cultural studies. The principal understanding in these cultural studies has been that researchers conduct their studies among alien, exotic and relatively bound groups. However, new metaphors and conceptualisations of culture have necessitated a paradigm shift within the ethnographic methodology. Such a paradigm shift in ethnography has given rise to two main types of ethnography: macro-ethnography, which focuses on broadly defined cultures and is associated with the genre of classic ethnography, and micro-ethnography, which is concerned with more narrowly defined cultures (Cruz & Higginbottom, 2013). The latter type of ethnography is also referred to as "focused ethnography, micro-ethnographies, rapid appraisals" (Higginbottom, Pillay & Boadu, 2013, p. 2). On these scholars' contention, this study adopts the terms micro-ethnography and focused ethnography, due to their specificity in describing the time and context orientation of the research strategy. These terms according to Higginbottom et al. (2013), capture the attributes of this genre of ethnography, which are, problem-focused and context-specificity.

Micro-ethnography is premised on the notion that culture is everywhere, porous and unbounded as such can be investigated and explored everywhere (Wall, 2015). With this notion micro-ethnographers contend that cultural studies do not have to be broad but need to focus on deciphering cultural realities within specific contexts (Wall, 2015). It is from this notion that Knoblauch (2005) conceptualised micro-ethnography or focused ethnography as an applied research methodology used in the investigation of specific social fields in a culturally diverse, highly fragmented and differentiated contemporary society. The functionality of focused ethnography according to Cruz and Higginbottom (2013) lies in its capacity to solicit information on distinct issues, situations, shared experiences or puzzling phenomena associated with limited elements of society in specific contexts. Contrary to classic ethnography such contexts need not necessarily be exotic or foreign to the researcher because the focus of this

methodology is not the amassing of knowledge but rather specific understanding of the complex specific contextual realities (Cruz & Higginbottom, 2013). Executed with this focus, micro-ethnography as a methodology accommodates the participants' perspectives (emic), whilst simultaneously allowing the infusion of the researcher's analytical and conceptual frames of reference (etic) in interpretation (Roper & Shapira, 2000). Below I present a comparison of focused ethnographies to classic anthropologic ethnographies as an overview of the difference between focused ethnography and classic ethnography, before I discuss how the former informed this research.

Table 4.1 Comparison of focused ethnographies to conventional/classical ethnography

(Synthesised from Cruz & Higginbottom, 2013, p. 39; Higginbottom et al., 2013, p. 4)

Micro-ethnography /Focused ethnography	Anthropologic (classic) ethnographies
Specific aspect of field studied with purpose	Entire social field studied.
Closed field of investigation as per research question	Open field of investigation as determined through time
Background knowledge informs research questions	Researcher gains inside knowledge from participatory engagement in the field
Participants serve as key informants with their knowledge and experience	Participants are those with whom the researchers develop a close relationship
Intermittent field visits and episodic participant observation	Immersion during long-term experientially-intense fieldwork
Recording generates notes and transcripts	Recording generates field-notes
Focused data session groups	Solitary open data collection in social fields
Data analysis intensive often with numerous recording devices including video cameras, tape recorders and photo-cameras	Narrative intensity
Data analysis intense, involving coding and sequential analysis	Data analysis involves coding

Other than as suggested by Higginbottom et al. (2013) above, from here I use the term focused ethnography as the semantics of the term capture the scope and spirit of my research strategy. In terms of spirit this study remained ethnographic. It was a cultural study. It involved the investigation of specific tacit assumptions or organisational cultures within a discrete

community – grade eleven life sciences classes at NHS. Like all ethnographies, this study was about interpretively deciphering UBYC in life sciences classrooms at NHS from UBY input and that of their teachers. In the spirit of ethnography data were collected from multiple sources. Complying with this feature, data were collected from UBY, their teachers, administrative records from the teachers and school administration. Data collection was done through the deployment of multiple methods with observation, interviews and documentary analysis being the primary methods. Data collection in the life sciences classes was through non-intrusive participant observation and conversations (unstructured and semi-structured interviews and co-generative dialoguing). In the spirit of ethnography this study focused on a single cultural entity (Knoblauch, 2005). In this study, in line with this aspect, the focus became UBY. Lastly, in terms of data analysis, analysis of ethnographic data involves interpretation of meaning. In this regard I invoked interpretive hermeneutics. I took hermeneutics to imply a commitment to interpreting data gathered giving due consideration to my lived experiences and positionality within this study (Hammersley, 1992). The above aspects of ethnography invoked in this study made it ethnographic.

Whilst the study was in principle ethnographic, its scope was focused, hence it became a focused ethnography. It was a focused ethnography because it focused on a specific culture framed within a discrete context, with participants being assumed to hold specific knowledge about the phenomena under study (Higginbottom, et al. 2013). As postulated by some scholars focused ethnographies foreground a distinct issue, situation or problem within a specific context among a small group of people living within a bigger community (Cruz & Higginbottom, 2013). In this study I focused on grade eleven UBY enactments in life sciences classrooms at NHS. Despite homing on UBY I still needed to consider their bigger community which in this case was the life sciences classroom and the school - NHS. Unlike in conventional ethnography I entered this field with four specific research questions and a conceptual understanding to illuminate my interpretation. Heeding Higginbottom et al's. (2013) positing, my research in line with focused ethnography took the form of first-level questions which focused on the aspects of the study. The first and second research questions were as such. Then there were two secondary questions (questions three and four), which were critical in understanding the *how* and *why* aspects of the research. Typical of focused ethnography, these questions were poised at generating new understandings about the new phenomena that seemed to be affecting grade eleven life sciences teaching and learning at NHS.

With regards to the duration of engagement, Schein (2004) contends that the only way to pinpoint cultural elements is to spend time in a culture and observe how people spend their time. However, whilst I acknowledged the value of long term immersion as is typical in ethnographies, it proved impractical considering that learners in South African schools were in a grade for four school terms and moved to another grade, a functional aspect which implied a change in multiple variables. In this regard focused ethnography was a more practical methodology as it provides and accommodates limited field immersion. In this regard focusing on deciphering and interpreting what was happening in the life sciences classrooms, I immersed myself in this study over three school terms, which under classic ethnography would have been regarded as a short time. However, under focused ethnography it was sufficient. This view is substantiated by Cruz and Higginbottom (2013) who posit that site engagement can be confined to six months with episodic participant observation as some sites have a much shorter life span (longitude). I did not feel that this duration in any way compromised my findings since it was not my intention to gather data on evolutionary trends but to collect data to address the guiding questions. As posited by Higginbottom et al. (2012) the crucial aspect in focused ethnography is not necessarily the length of immersion but the attempt to understand practices from the participants' point of view and the dynamics of the context. As argued by Wall (2015), time spent in the field does not guarantee that all data collected will be of any relevance, in some cases useful and pertinent data can be gathered with minimum time investment. It is with this understanding that focused ethnographers postulate that limited time in the field can be compensated by a higher intensity and volume of data from multiple sources (Knoblauch, 2005).

As a teacher at NHS for over seven years I had some insider or background knowledge of the participants, another aspect which placed this study within focused ethnography (Wall, 2015). Lastly, this study resonated with focused ethnography due to the intensive methods of data collection and recording which included: photographs, policy documents, Code of Conduct, statements of events, biographical material, standing instructions, video recordings and academic results (Roper & Shapira, 2000). Whilst concerns are raised about the limited cultural immersion in the field associated with focused ethnography and its implications for trustworthiness, I concurred with Wall (2015) that the *sine qua non* of ethnography is its focus on generating cultural understandings from thick descriptions and not the form and amount of data collection that occurs or the duration of engagement. Thus, whilst I conducted this study over eight months, what was critical was whether I could answer the typical ethnographic

question: “What is going on here” through the generation of copious amounts of data (Wolcott, 1999, p. 69).

4.5 THE RESEARCH SETTING

This study was conducted at Northlea High School (NHS). Northlea High School is a co-ed high school located in the middle-class suburb of Northlea, about fifteen kilometres west of one of South Africa’s sprawling port cities. There was no external motivation for choosing this school other than the catalytic events captured in the prologue. All those events that prompted me to embark on this journey had transpired in two grade eleven life sciences classrooms at NHS and as such this became the physical space in which the research was carried out. The school opened its doors in 1969. The port city where Northlea High school is located has been greatly influenced by English traditions, and the city still bears the name of a prominent English person who was a governor of the British outpost in South Africa in the 1800s. Northlea suburb was and has remained predominantly white, even though after the advent of democracy some Black and Indian people have bought properties or lease houses in the area.

4.6 RESEARCH METHODOLOGY AND METHODS

In the preceding section I situated the study within an interpretive paradigm, with a qualitative approach and my orientation to enquiry being that of a focused ethnography. The above section outlined the philosophical assumptions, which governed how this study was conducted. In this part of the chapter I present methodological aspects of this study. I outline how I practically went about unravelling the puzzling phenomenon, called UBYC. I begin by presenting how participants were recruited. I then proceed to outline how data were collected (methods and instruments), analysed, and interpreted. In the outline, I provide my rationale for choices and decision made in all aspects of this methodology.

4.6.1 Participants

Those who are critical of qualitative research tend to question its usefulness and transparency. According to Higginbottom et al. (2013) such critique can be addressed by describing the sampling process and the characteristics of the sample. The distinguishing feature between qualitative and quantitative research approaches seems to be the logic underpinning sampling techniques (Moriarty, 2011). In terms of logic, the quantitative approach foregrounds probability sampling which permits statistical generalisations and inferences to be made from mathematically determined samples to larger populations. Conversely, the logic behind the qualitative approach is to identify limited typical cases from

which in-depth information about phenomena can be obtained (Moriarty, 2011). Thus, the qualitative approach focuses in depth on relatively small samples selected purposefully because of certain attributes which the individuals possess which are deemed pertinent for the research study. In the purposive selection of participants, the guiding principle is choosing with a purpose only those individuals who better represent the context, or type in relation to key criteria (Cohen, Manion & Morrison, 2011). Thus, within an interpretive paradigm sampling is poised at accomplishing two aims: ensuring that all key participant constituencies are covered; and guaranteeing diverse representation in participant groupings so that the influence of participant variability is accommodated and explored (Ritchie & Lewis, 2003).

The philosophical foundations; the research approach, strategy and methodology of this study made purposive sampling the most ideal sampling technique. There are a range of approaches to purposive sampling, each striving to produce a different type of sample composition based on the objectives of the study. In this study I used criterion-based participant recruitment (Gulati, Paterson, Medves & Luce-Kapler, 2011). In order to generate sufficient understanding or *verstehen* to make interpretations of what was unfolding in life sciences classrooms at NHS I needed to handpick knowledgeable participants. Knowledgeable participants according to Cohen et al. (2011) are those individuals who have a deep epistemic disposition to the issues or phenomena under investigation. Such individuals derive this disposition from their roles in organisations, agentic power, and access to certain relational networks as well as historical experience (Cohen et al., 2011). Such a disposition gives voice to such individuals and allows them to comment and give narratives on matters of interest to the researcher. Participants within the interpretive paradigm and focused ethnographies are assumed gatekeepers who render the researcher access to the study population's knowledge through baring their knowledge (Higginbottom et al., 2013). With this understanding of the purpose and nature of purposive sampling, I used criterion-based purposive sampling in this study. I used pre-established criteria in selecting grade eleven UBY that I thought were knowledgeable, hence had voice about what was unfolding in the life sciences at NHS. I used the inclusion/ exclusion criteria outlined in table 4.2 below in constituting focus groups for co-generative dialoguing.

Table 4.2 Inclusion/Exclusion Criteria for participants in this study

Attribute / Characteristic	Criteria
Age	Participants had to be between 13 to 19 years of age at the time of study.
Race	The participants had to be Black. (I have presented the term Black in chapter one) * Teachers were to be White and Indian.
Gender balance	Both Black male and female learners were included.
Comprehension	The participants were supposed to be able to demonstrate an understanding of the study, by being able to read and sign their consent forms. *Teachers had to have been teaching life sciences at NHS for more than one year at the grade 11 level.
Language proficiency	The youth were expected to be able to communicate verbally in any of South Africa's official languages.
Curriculum	The Black learners to be involved in this study were to be in Grade11, learning life sciences.
Consensual capacity	Parental consent had to be given for the UBY to be involved in focus group discussions and other follow-up interviews. The participants had to willingly consent to participate by appending their signatures.

*criteria for teachers in some domains

The above criteria served as the primary exclusionary and inclusionary standard in constituting the focus groups. However, since we engaged in co-generative dialoguing after I began conducting participant observations I was able to infuse other secondary criteria. As I observed the life sciences classes, I was able to identify individuals who met the above criteria and also stood out in other culturally significant ways. Cultural significance included those whose observable enactments seemed to resonate with what my colleagues had raised. Though not necessarily deviant, these UBY seemed representative and stood-out in the way they acted in the life sciences classroom. Cohen et al. (2011) encourage researchers to consider such deviant cases as key participants in purposive sampling. As I conducted my observation informed by my analytical framework, I took note of those UBY who came in late, sat at the back, those who engaged in tasks other than those allocated by the teacher or seemed disengaged. I also looked for those who seemed to be opinionated and those who stood-up to the teachers and back-chatted. This exercise was confirmatory since in the first stage of my

study I had gone through grade eleven files checking for incident reports or statements of events associated with grade eleven life sciences learners. Such information was in learners' files kept at the administration office. Thus in coming up with my final sample I also looked for those whose records I was privy to and were historically associated with issues which my colleagues had raised. Using the criteria above, information from learners' files, observed enactments in life sciences classrooms and personal wisdom I selected ten UBY I presumed representative enough and most likely knowledgeable of the phenomena I sought to decipher. Ten individuals fell within the recommended range of six to twelve participants for focus groups (Maughan, 2003). In line with this recommendation and cognisant of the need for homogeneity I drew five learners from each of the two classes and maintained gender balance within the group. It was my view that constituted this way, this sample would allow an in-depth exploration of the social processes operating in this context. I later deployed the same purposive technique when I chose one individual who I considered a key participant (Schein, 2004). This individual (Top Dog) came across as the spokesperson of the UBY during co-generative dialoguing and they all seemed to venerate him. As I began data analysis this extreme case / deviant (Cohen et al., 2011) proved invaluable as he provided potentially enlightening information which was invaluable in deciphering what was going on in grade eleven life sciences classes at NHS.

With regards to teachers I invited the only other two grade eleven life sciences teachers other than myself to be my participants. Both teachers were female, one White and the other Indian. They had been teaching life sciences at Northlea for more than five years, with Ms Perkins (the White teacher) having been at NHS for more than thirty years. In terms of the purpose of this study no participants would have been more suitable than these two.

4.6.2 Data collection

Data collection in this study had to accommodate three important areas that constituted this study. Firstly, data collection had to capture the essence of the context. Secondly, data collection had to capture discursive enactments by all participants in this study (both teachers and UBY). Lastly, data collection had to solicit explanations for observed enactments. On the basis of these three areas data collection was guided by three questions that stemmed from the research questions and anchored within focused ethnography. The three guiding questions were: What was the nature of the field? What was going on in the field vis-à-vis UBY? Why were UBY doing what they were doing within the life sciences classrooms? In the first two questions I refer to the field cognisant of its macro and micro-nature. With this understanding

as already alluded to, data collection needed to employ methods that could capture the essence of the field, discern what UBY were doing, what they thought they were doing and their explanations for what they were doing. Thus, data collection became a knowledge gathering exercise about the forms of cultural artefacts (Schein, 2004) nature of power operationalisation (Foucault, 1980) and the transacting of cultural *capital* (Bourdieu, 1986) linked to UBY in life sciences classes at NHS. In a Foucauldian way data collection had to proceed in a manner that recognised the symbolic representation of power through shaping of observable localised agentic dispositions and their manifestation in agents' practices and institutions. Despite emphasising the *in situ* multiple realities I also needed to go beyond the present and delve into the history of the present reality. To accommodate the present as well as the story that lay a priori, I invoked Foucault's genealogical and historical emphasis. This coupling of philosophies entailed the use of Bourdieu's anthropological tools (observations and interviews) as well Foucault genealogical excavation which involved going through archival material for a historical analysis of UBYC and UBY documented artefacts.

As a teacher working with young people (UBY) and as a researcher whose conceptual frame was located within motivation, I knew that maintaining UBY interest demanded creative data collecting strategies. Wishing to explore what was going on and understanding it in-depth to interpret, it implied choosing methods that were engaging, open-ended (to foreground the young people's voices) and extensive enough to provide sufficient depth to corroborate (or triangulate) findings. Coupling my analytical and conceptual frameworks with my methodology enabled the use of multiple data collection methods which included participant observation, focus group/co-generative dialoguing, semi-structured interviews with the life sciences teachers and an unstructured interview with one key participant whom I considered the leader amongst UBY and better acquainted with UBYC in life sciences classrooms at NHS. These methods served as the primary modes for data collection. Secondary sources of data included non-intrusive auto-biographical notebooks completed by the learners, life sciences teachers' autobiographies; archival material from learners' files which included: incident reports and statements of events; as well as NHS policies, Code of Conduct, staff-meeting minute books; school annual books, school assembly book and photographs. These secondary data were crucial in confirming and contrasting interview and observation findings (Higginbottom et al., 2013).

This triangulation of methods was essential, as each method illuminated only particular aspects of the social reality in the life sciences classroom at NHS. Through participant

autobiographical note books (auto-books), examination of archival materials (incident reports and statement of events) and educator interviews observed and identified UBYC artefacts were confirmed. Further interviewing and co-generative dialoguing brought out the UBYC espoused values and yielded their fundamental assumptions. It was my view that this cross-referencing of data from different methods was crucial in adding to the overall credibility and trustworthiness of the research process as it enabled the capture of different responses on the same aspect that was under study. Here, I regard trustworthiness and credibility as the accuracy of the representation of the subject and context studied (Gray, 2003). What mattered for me during this study was not the pursuit of context-independent, generalisable knowledge but I was after producing well-described situationally-embedded knowledge about what was unfolding and had been witnessed in life sciences classrooms at NHS (Kvale, 2007). In the following section I present the data collection methods and related instruments used in this study.

4.6.2.1 Observations

The ultimate aim of any ethnographic study is the generation of thick descriptions (Spradley, 1979). The generation of such thick descriptions involves extensive observations in context. Observations were conducted in two phases and on two contexts: Phase one observations focused on the macro-context or institutional context – NHS and phase two observations focused on the micro-context - the life sciences classroom. The former was my initial observation phase and was aimed at observing the context in which the life sciences classrooms and UBY were located. Data collection through observation in this phase was therefore monological and conducted from an *etic* perspective. It was monological in the sense that data collection only involved me and *etic* in the sense that descriptions of observations were based on my own perceptions (Cohen et al. 2011).

In line with focused ethnography I entered NHS and began observing with specific research questions. From my analytical and conceptual framework, observation centred on the social structure of the context. Specifically, I needed to identify contextual structures that were culpable in the development of UBYC, which I presumed was the phenomena my colleagues were having problems with. From January to March 2014, I unobtrusively observed the organisational arrangements, operational procedures and routines at NHS. In terms of organisational arrangement my observations focused on the organisational organogram, curriculum organisation, discipline management, assessment programs and extra-curricular activities. In terms of procedures and protocols, I walked through NHS and observed daily

routines. I also observed the physical environment and relational architecture. Observations made during the day were noted in an A4 exercise book from which I transcribed such notes into an electronic word document which served as my field journal. In maintaining this journal, I made entries in it at the end of each school day during which I had made any significant observation. I hasten to point out that in observing the macro-context, I only noted those aspects of life at NHS which I deemed pertinent to addressing the research questions. Observation or field notes in this phase of observation were primarily descriptive and devoid of inferences or interpretations; for example,

At six o'clock in the morning the caretaker of NHS opens the learners and visitors' gate. Learners using various modes of transport slowly begin to enter the school premises and because classrooms are locked they cluster in various areas of the school precinct. The majority of the learners come into the school yard between quarter to seven and half past seven (Observations, Tuesday 26th January, 2014)

Other than documenting my observations of the macro-context I later moved around and took photographs of features that I deemed critical in understanding NHS as a physical context in which UBYC was developing. These photographs visually captured some aspects of life at NHS which I could not transcribe and express in words. As argued by Higginbottom et al. (2013), true to the adage that a picture is worth a thousand words, such visual representations of the context offer a heightened perspective of data and contributed to the thick description of this study. Photographs offered that dimension in my study which accommodated non-verbalised communication at NHS and one that could have been missing in archival materials hence could not be hermeneutically interpreted. Although the photographs were not systematically analysed they were important for the recollection of observations during analysis and interpretation. The photographs were taken using a digital camera and were labelled according to the feature or activity they captured.

From Schein's (2004) model for cultural analysis the observations and archival material are artefacts and constitute the outermost level of cultural analysis. Thus, in this phase I observed artefacts of NHS and felt the artefacts of UBYC from the records. To further augment these felt observations I needed to observe manifestations of UBY cultural artefacts in situ, that is in the life sciences classrooms. This therefore warranted the second phase of observation which I conducted between April and July 2014. In this phase observation focused on the micro-context which in this case was the life sciences classroom. It was my view at this stage that whilst interviewing would later give me access to the spoken word it had a limitation in that it could not afford me an opportunity to witness classroom practice. It was in this regard

that lesson observation was crucial. Methodologically, lesson observation data provided information upon which to structure subsequent interviews with the life sciences teachers as well as for dialogues with UBY.

Unsure of the artefacts I was to encounter in life sciences classrooms at NHS, but with a need to be focused, I developed a tentative observation guide (Appendix 8). In exploring the micro-context I narrowed my observation to three areas: physical artefacts, practices and interactions. The first area dealt with descriptions of the physical environment of the life sciences classroom, which included seating arrangements, literature, room layout, and so on. Subsumed beneath practices and interactions were six cultural aspects which included: the cultural aesthetics of the setting, evidence of culturally relevant literature; usage of statements of cultural affirmation; instances of culturally relevant practices and strategies; evidence of interaction of life sciences teachers with all cultural groups; and lastly any unanticipated event with cultural significance. Using this guide, I focused on incidents and rituals that came across as imbued with cultural meaning. Such occurrences took the form of phrases, actions, body language, dispositions, spatial arrangements, verbatim cultural affirmation, inclusive and exclusionary strategies, aesthetics of the environment and any other significant unanticipated incidents. Such occurrences were not observed as isolates but as reciprocally synergistic as life sciences teachers and UBY interacted in these contexts.

During the classroom observation I was a non-participant observer. In line with recommendations by Higginbottom et al. (2013) in this role I observed all that went on in the grade eleven life sciences classrooms during my visits without becoming involved in any way with what was unfolding. This outsider role was crucial in eliminating my influence as with this distant engagement I acquired an advantaged, detached lens to look and assess the cultural dynamics in the life sciences classes as various rituals were enacted by the participants. In this role I descriptively wrote my observations knowing that what was unfolding was largely due to the contextual dynamics in which my only contribution was my presence. Observations in the classrooms were completed on a template of the observation guide and later transcribed into electronic word documents and saved.

Classroom observations were conducted three times in each of the two life sciences classes at NHS between April and June 2014. Each observation lasted approximately fifty-five minutes which was the duration of the life sciences lessons at NHS. The observation itinerary was arranged and agreed to with the teachers and was conducted as in the table below

(Table 4.3). I conducted these observations over such an extended period as I wanted to observe classroom dynamics as learners engaged in different content areas. Conducting observations over such an extended period also allowed observations to alternate with interviews which were also conducted within this period. It was my view that input from observations into interviews was critical in facilitating co-generative dialoguing in particular as it served as a reference point. According to Schein (2004) such an alternating cycle unravels the surface level of culture through its capacity to excavate dominant artefacts in the form of rituals, forms of interaction, communication styles and physical space management.

Table 4.3 Class observation schedule

Teacher	Topic	Date
Perkins	The gaseous exchange system	2014/04/24
Perkins	The excretory system	2014/05/09
Perkins	Respiration	2014/05/21
Moosa	The gaseous exchange system	2014/04/24
Moosa	Excretory system	2014/05/29
Moosa	Respiration	2014/06/11

4.6.2.2 Interviews

According to Schein (2004) if one wants to decipher what is really going on in a particular organisation, one has to start inductively and through archaeological excavation glean artefacts. This aspect was covered by observation and collecting and perusing archival materials. However, Schein (2004) posits that artefacts by themselves do not tell much about an organisation as they are at the surface level. Thus there is need to engage other methods that can dig beneath the surface. In this quest to excavate beneath the surface, Babbie and Mouton (2001) suggest two ways through which a researcher may come to understand another person's meaning. They postulate that firstly, a researcher may simply ask the question, *Why?* Secondly, the researcher may look for contradictions offered by the participant. Through a consideration of these two, an understanding of what the participant's understandings are and how they came to construct their meaning in that particular way, as well as how much the participant values that particular meaning construction, is established. In terms of research design this entailed a closer dialogical engagement between the researcher and the participants which

involved asking participants why certain observed phenomena happened the way they do. This was the essence of my interviews in this study.

Interviewing, together with classroom observations were conducted between April and July 2014. It was my understanding, according to Schein's (2004) model of cultural analysis that observations were to generate data on artefacts of the cultures. Interviewing then was to be instrumental in establishing the espoused values and to a lesser extent expose some fundamental assumptions of UBYC. According to Schein (2004) through interviews or survey instruments a culture's espoused and documented values or norms can be captured. With this knowledge, data collection in this stage of research proceeded by means of active engagements in the form of semi-structured interviews, unstructured interviews and co-generative dialoguing. Unlike observation and document collection which were monological, interviewing was dialogic and involved communicative engagement to gain an emic or an insider's position (Hardcastle, Usher & Holmes, 2006) with respect to artefacts identified in observations. Heeding recommendations by Cohen et al. (2011) data were generated and discussed with participants in a dynamic and interactive manner.

Interviewing took the form of semi-structured interviews with the two grade eleven life sciences teachers; co-generative dialoguing with ten UBY who constituted the focus group and an unstructured interview with one of the grade eleven UBY. These methods were employed, and the data they produced enabled the participants' voices to be enacted which I was convinced democratised this research process. Below I present each of these methods, as well as describe why and how they were used.

Semi-structured interviews with life sciences teachers:

Semi-structured interviews (Ritchie & Lewis, 2003) offered me access to grade eleven life sciences teachers' ideas, thoughts and memories in their own words, rather than I capturing them in mine. This aspect, according to Bourdieu (1999) makes the interview of benefit to the interviewee as they introspect and reflect on all that surrounds them and goes a long way in diminishing the influence of the interviewer on collected data. My first objective in interviewing the life sciences teachers was to allow them to tell their story in their own words about their experiences at NHS and in interacting with UBY in life sciences classrooms. Secondly, it was my view that interviewing would provide true unadulterated conversations of the way the life sciences teachers perceived themselves and UBY as they interacted in ordinary circumstances like the life sciences classroom. It was my firm belief that as I interacted with

the teachers in this process it was an opportunity to: perceive; witness; and monitor *on the spot*, a dimension of the context in which UBYC was evolving (Bourdieu, 1999). Lastly, I employed semi-structured interviews because I felt they had the capacity to encourage the social processes of talking and listening and would thus foster my understanding of the phenomena I was studying. In addressing the objectives above, the semi-structured interviews were providing data to address research questions one, three and four.

Two semi-structured interviews were conducted during times and in places that were most convenient for each of the two grade eleven life sciences teachers. All four individual interviews with the teachers were conducted during the second school term, that is, in April and May of 2014. Mrs Moosa was more comfortable being interviewed in her husband's office who happened to be a member of management at NHS. Interviews with Mrs Moosa were held on the 16th of April and 25th of April. The first interview with Ms Perkins was conducted in her laboratory which also served as her classroom on the 17th of April 2014. The second interview was conducted in my classroom after school on the 21st of May, 2014. With regards to timing, interviews with Mrs Moosa were conducted during her preparation periods during the normal school hours. However, Ms Perkins preferred her interviewing to be after school when learning had officially ended.

In order to capture the narratives of the participants with precision, all interviews were video-recorded and later transcribed verbatim using the NVivo software. Using an interview schedule, the thrust of the interviews was dual: to probe teacher understandings, and also establish why they had these understandings and practised the way they did. As they answered these questions in the spirit of semi-structured interviewing, I probed further and was able to identify some artefacts of UBYC. In this regard these teachers became my co-ethnographers. I listened to their perceptions of the UBY community and its cultural elements and these accounts of their experiences and *etic* insights served as important stories that added to the thick description. Through the same interviews I was also able to glean the grade eleven life sciences teachers' espoused values and some of their fundamental assumptions on UBY and UBYC were exposed.

Typical of semi-structured interviews, I used an interview schedule as a guide for facilitating conversations with the life sciences teachers. Broad, open-ended questions were used to generate discussion, for example, "describe the learners you teach in your life sciences classes" (Appendix 9) and more direct questions were also used to probe when participants

demonstrated difficulty in providing details. Such a question structure was designed to allow participants to speak openly and at length of their personal experiences as life sciences teachers of UBY at NHS. Using a recursive style of questioning, I began the first individual interview with the teachers with a tentative set of questions that solicited biographical information and teacher perceptions of multicultural education. I then proceeded to solicit teachers' narratives on their experiences with diverse learners within their life sciences classrooms (Appendix 9, instrument 2a & 2b).

The second semi-structured interview was meant to unravel teachers' understandings and perceptions of culture in teaching and learning life sciences. Probing in this interview centred on the teachers' definitions and understandings of concepts such as culture, multiculturalism, culturally responsive teaching in life sciences and other closely related constructs (Appendix 9, instrument 2c). The second semi-structured interview also dealt with the participants' experiences as teachers of UBY and subtly sought to establish life sciences teachers' amenability for UBYC accommodation in life sciences teaching (Appendix 9, instrument 2d).

As much as each individual interview consisted of the same template of initial questions, I was flexible to further probe the teachers on the basis of their responses. This further probing made each interview last between forty-five minutes and one and half hours. Data from interviews augmented brief autobiographies the teachers had supplied prior to these interviews. Through this concerted approach I was able to tease out and decipher the teachers' taken-for-granted, underlying, and usually unconscious assumptions that influenced their perceptions, thought processes, feelings and behaviour. These data were critical in determining the nature of the contextual structure which the teachers were creating in their classrooms which may have been complicit in UBYC development. Thus, knowledge and understanding of this structure was important in deciphering Schein's (2004) challenges of external adaptation which UBY had to contend with in life sciences classrooms. My notion was that from these interviews I was to adequately address the first, third and fourth research questions, that is: establish the context in which UBYC developed; how UBYC influence the teaching and learning of life sciences; and from responses I would interpret why it influenced the teaching and learning context in the manner it did.

Co-generative Dialogues / Focus Group.

Researching classrooms whilst being a teacher in the same context posed a moral dilemma as my actions could be construed as exploitative. This was the ethical problem that

emanated from the dual relationship I had with learners at NHS during this study (as a teacher to learners and as researcher to participant). As much as I was not teaching any of the learners involved in the study, the fact that I was a teacher in school and had taught some of them at some point in their lives at NHS meant that there was a need to even out the power gradient or at least minimise it. The solution to this dilemma I found in Emdin's idea of "co-generative dialoguing" (2010, p. 117).

In a co-generative dialogue, all participants collaboratively generate the discussions, rules of engagement and by consensus validate outcomes of the discussion. According to Emdin "each participant involved in the co-generative dialogue, in accordance with philosophically cosmopolitan ideals, has equal agency or the ability to act independently and with equal influence and positioning in the dialogue" (2010, p. 117). In terms of focus group protocol, co-generative dialoguing entailed not having a pre-set agenda or discussion schedule. This was critical because there was no way I would have known whether the dimensions I was to ask were relevant or salient for the UBY. I had gone through archival materials about UBY and had witnessed some of their enactments, what I needed to do at this stage was to hear their voice. This open-ended approach proved useful as it solicited how UBY felt and thought without constraining pre-judgements.

Seven co-generated dialogues with ten grade eleven Black learners from the observed classes took place in this stage of data collection. During the seventh dialogue I felt that the emerging data were becoming repetitive and further coding seemed non-feasible (Fusch & Ness, 2015). The seven co-generated dialogues were held over the second school term (April-July, 2014). I devoted a complete week from the 12th of May to the 16th of May 2014 for dialogues one to five. The last two dialogues were held on the 20th of May, 2014. My understanding in conducting these dialogues was that for continuity in conversation intermittent breaks were going to be disruptive to the conversational flow. It was easier for us to say, "What were we talking about yesterday?" and proceed from there. All dialogues were video-recorded and transcribed verbatim into electronic word documents. Data collected in any language other than English was translated and transcribed into English text. By consensus the group dialogue took place during the first lunch break, which was thirty minutes long.

The first dialogue (12th May) was cathartic and introductory. The theme for discussion was - Who am I? This dialogue also explored what it meant to be Black. Subsequent sessions after this were largely informed and their scope determined by the preceding dialogue with

infusions from what I would have observed in the life sciences lessons. The second dialogue, (13th May), delved into what it meant to be an UBY. The third and fourth sessions, (15th May), pushed into the experiences of UBY at NHS and their experiences in life sciences. In the fifth dialogue (16th May), I initiated a discussion on rituals and routines I had observed in the life sciences lessons. I brought up issues like why UBY sat at the back of the classroom, why they did not raise their hands and were quick to walk out of the classroom when asked, and so on. My intention in this dialogue was to push beyond the layer of espoused values into their underlying assumptions. Dialogue six and seven, (20th May) explored their assumptions on values, interests and their outlook on success, respectively.

Co-generative dialoguing proved to be a profound data generation strategy. The benefit from co-generative dialoguing was bi-pronged; firstly, the UBY found the group setting to be fun and resultantly the dialogues managed to elicit information which would otherwise have remained buried. Secondly, co-generative dialoguing allowed the UBY to converse and share with each other their experiences on issues that turned out to be common amongst them, particularly their experiences as UBY doing life sciences at NHS. Thus, the strength of these dialogues lay in their ability to elicit information that would have been difficult to obtain from individual interviews or for which there was need for collective understanding. The data from co-generative dialoguing yielded not only insights that would have been inaccessible in straight-forward interviews but also proved economical on time as they produced large amounts of data in a relatively short time. This does not in any way underplay the role of individual interviews on a one-to-one basis with the same numbers producing more data than what was generated here.

In the interviews I attempted to ensure rigour by embedding a couple of credibility checks in the process of data collection. Carspecken (1996) proffers several checks, some of which I adopted in this study. In this study I infused rigour through avoiding leading questions during interview with life sciences teachers and in dialogues. I repeated interviews with participants and asked participants to use their own terms in describing naturalistic contexts. I also asked participants to explain unfamiliar key terms. Lastly, I did member checking with the teachers through which I checked the consistency of interviews that had been recorded. The first three checks were entrenched in data collection but the last one was done after transcription. Transcripts were given back to the two teachers and two subsequent meetings were held in which I casually presented ideas that were emerging from the data. Consensus was in-built in co-generative dialoguing and ensured that there was no ambiguity in opinions raised. At the

end of each dialogue I would summarise verbatim what had come up during dialogues and participants would confirm or disconfirm aspects emerging from the dialogues. This went a long way in promoting rigour in the dialogues.

Unstructured Interview

After conducting the dialogues with the ten UBY in the second school term of 2014 at the end of August I had managed to transcribe the data. From the transcribed data from Schein's model I knew that artefacts and espoused values could be captured. However, fundamental assumptions which are the essence of culture were still hidden. It was at this stage that there was need to delve deeper into the outlook, predilections and understandings of UBY and get insights into how UBYC was operationalised. According to Cohen et al. (2011) a central plank in such in-depth excavations is the collection of data via in-depth, unstructured interviews with a participant who is representative enough or what they refer to as a typical case. Cognisant of the need for such a probing approach, an unstructured interview was conducted with one of the UBY whom I identified as an extreme case during the focus group. This interview was conducted in the third school term on the 2nd of September 2014. He happened to be saying more (Cohen et al., 2011) in the dialogues, seemed knowledgeable of the deeper aspects of UBYC and his peers regarded him as their leader and referred to him as *Top Dog* in the group. I held an hour long discussion with Top Dog in my classroom as I tried to decipher how UBYC was formed, attributes for membership and its hierarchy. It was my view that an understanding of these tenets would corroborate and unravel meanings implicit in the artefactual phenomena I had captured.

The unstructured interview began with a general discussion on something that UBY in dialogues referred to as the food chain. Once we moved from general aspects Top Dog opened up on personal aspects about who he was and how the context was complicit in making him who he had become. The discussion further extended to UBYC and schooling and the learning at NHS. This unstructured interview managed to reveal UBYC and was critical in addressing the second and fourth research questions. This interview was video-recorded, then electronically transcribed verbatim into a word document and saved. After transcription a copy was given to Top Dog overnight. We met the following day and member checking was done.

4.6.2.3 Participatory development techniques

Ethnographers are coming up with new ways of soliciting data from participants which are non-intrusive. Such data collecting strategies have been termed participatory development

techniques (Gulati, Paterson, Medves & Luce-Kapler, 2011). Participatory development techniques, when used in contexts associated with diversity, have been observed to provide deeper insights into the lives of the participants (Gulati et al. 2011). Participatory development techniques involve tasks which participants independently work on, which the researcher collects and analyses. Usually such tasks involve written or visual activities. Cognisant of the limited time in the field and its impact on the generation of a thick-description, I incorporated participatory development techniques in data collection. I was of the view that such data would augment that from observations and interviews.

For UBY, participatory development techniques involved the learners compiling an autobiography. In January 2014 I designed an autobiographical book (auto-book) and gave it to the ten UBY participating in the dialogues over the second school term to write about themselves. As a thought-guide I provided sub-headings under which they wrote their narratives, which included interest, values, heroes, ambitions and so on (Appendix 7). They kept these books with them for the whole term and I collected them after dialoguing before schools closed for the second term holiday. The collected auto-books were assigned pseudonyms as those used in dialogue transcripts and directly transcribed using Microsoft word into electronic formats.

In 2014, public schools opened on the 16th of January 2014. I already knew data collection was to begin that term and that Mrs Moosa and Ms Perkins were to be my participants. I visited them after they had consented to be involved in the study. I asked them to write me stories of their lives both as Indian and White female South Africans and life sciences teachers at NHS. The narratives they were going to generate were both personal and professional biographies. These narratives, as opposed to those of UBY were open-ended. I was of the notion that such a task as a participatory development technique was going to expose the teachers' espoused and even reveal to a limited extent their tacit assumptions. The teachers wrote their narratives and gave them to me after a month, that is, for Ms Perkins on the 19th of February and Mrs Moosa on the 21st of February, 2014. Ms Perkins narrative was already in electronic format whereas Mrs Moosa's was handwritten and I had to transcribe it into electronic format. Both narratives were saved as Microsoft word documents.

4.6.2.4 Archival materials

Whilst conducting observations of the macro-context I also engaged in gathering archival material related to NHS and UBY in grade eleven life sciences classes taught by my two

colleagues. According to Schein (2004) archival materials provide culturally endowed and unobtrusive sources of cultural data about organisations. From the administrative office or front office as they called it at NHS, I collected school policy documents, standing instructions, Code of Conduct, management plans for various school activities. From the school principal I was given access to the staff meeting minutes and the school logbook in which significant events at NHS had been recorded. From room C12 (the school's archive) I accessed learner files. With class lists from my colleagues I went through the grade eleven learner files, firstly picking all Black learner files. I then searched for files of those UBY from my colleagues' lists in which there were records which had some information I deemed pertinent for this study. Such records included classroom incident reports and statement of events. Due to the fact that at this stage I hadn't constituted my focus groups for the next stage of data collection (co-generative dialoguing) I only took note of the learners' names for easier retrieval in the event I decided to make them participants. Later on after constituting the focus group I returned to C12, retrieved incident reports and statements of events from the UBY participants which I photocopied and returned to the files. Other than retrievals from files of UBY who were participants, I also retrieved reports from two other grade eleven learners whose files appeared thicker than the rest. Even though these learners were not in the focus group, they did life sciences. The retrieved and copied incident reports and statements of events were then transcribed into electronic formats and saved.

Below I present a composite table of the data collection process. Even though I have tried to compartmentalise it, I hasten to point out that the process was not as clean and distinct as may be implied. Each of the individual data collection methods contributed to addressing each of the research questions. The foundational axioms of this study postulate that no single lens can illuminate reality, in the same manner no single method, instrument or period can be ascribed to addressing a particular research question. This composite was developed to capture the descriptions of the methods and timing above in a simplified way, however, the process must continue to be viewed as a gestalt.

Table 4.4 Data collection composite

Research Questions	Data Collection Methods	Instruments	Time
What is the context in which UBYC develops at NHS?	Monological observations Archival material collection Photography Teacher Interviews	Digital camera Interview schedule Field Journal Policy documents	Jan – April 2014
What is the nature of UBYC as observed in life sciences classrooms at NHS?	Teacher interviews Archival material Classroom observation Co-generative dialoguing	Interview schedule Learner files Observation schedule Auto-books Digital camera	April- Sept 2014
How do aspects of UBYC influence the teaching and learning of life sciences at NHS	Class observation Co-generative dialoguing Archival material Teacher interviews	Observation schedule Digital camera Learner files Interview schedule	
Why does UBYC influence the teaching and learning of life sciences at NHS in the way it does?	Co-generative dialoguing Teacher interviews Class observation	Digital camera Observation schedule Interview schedule	-

4.6.3 Data Analysis

This study was a focused ethnography which from Schein's framework can be regarded as a protracted cultural analysis. In this study, through the four research questions I endeavoured to capture the context in which UBYC developed, its nature, how and why it influenced the teaching and learning of life sciences at NHS. Thus, data analysis in this study as in all ethnographies was synonymous to cultural analysis. Invoking a qualitative approach to analysis it entailed breaking data into more manageable parts and developing codes from the data in search of cultural patterns (Bogdan & Biklen, 2007). Such a process involved an iterative and self-reflective process that resulted in the interpretive generation of new insights on the cultural phenomena from the data (Higginbottom et al. 2013). My focus in this cultural analysis was the identification and classification of data to tease out UBYC tacit assumptions hence explain the observed phenomena.

Once I had data in electronic Microsoft word format I faced, like most aspiring social scientists, the challenge of how best I would analyse and interpret it to make it more meaningful and address my four research questions. As much as there were elements of data analysis in-built in data collection, formal data analysis commenced after the interview with Top Dog on the second of September 2014. Data analysis began with the importation of all electronic transcripts to QSR NVivo10, a qualitative data analysis software programme. All transcriptions at this point were not categorised but filed in the system as sources. I would like to point out that despite this categorisation which may imply contextual fragmentation, informed by my research paradigm all data were treated as one organic whole. This categorisation by sources was meant to make data handling easier and did not imply analytic dissociation.

According to Schein (2004) the first stage cultural analysis involves the capture of organisational artefacts. According to Schein (2004) the question that elicits artefacts is, *what is going on here?* The first stage in data analysis focused on addressing this question and through its address, artefacts were identified. Artefact identification proceeded by going through transcripts teasing out all phenomena that I had observed happening (observations), what I was told happened (interviews and dialogues), and what was recorded as having happened (archival material) that had anything to do with the research context. Using NVivo, I read through all transcripts and coded all artefacts by context. For example, if an artefact was associated with UBY I coded it on the node UBY artefacts. The same was done with artefacts associated with NHS and life sciences teachers. Cohen et al. (2011) refer to such analysis as typological analysis whose purpose is classificatory wherein data are put into groups, subsets or categories on the basis of some clear criterion. This was the first step in data analysis. During this step analysis was not thematic and artefacts were not categorised but simply described as NHS, life science teachers' and UBY artefacts.

Following Schein's (2004) model, after identifying and naming the artefacts I then proceeded to code for espoused values. The question that helped me in eliciting these was: "*Why were UBY doing what they were doing*" (Schein, 2004, p. 343). Addressing this question was aimed at eliciting the values and beliefs held by NHS, life sciences teachers and UBY in life sciences classrooms at NHS. Rather than expressing what was happening in groups, espoused values indicate group aspirations or what ought to be (Schein, 2004). In eliciting espoused values, I went back to transcripts and archival material that I had not transcribed (policy documents, log books and so on) and coded what I interpreted as espoused values for each of the three organisations (NHS, life sciences teachers and UBY). In identifying espoused

values my emphasis was on matching artefacts with responses to why UBY did what they did. I did this for all the artefacts identified. As recommended by Schein (2004) emerging espoused values had to be socially validated, which implied that I only regarded values and beliefs as espoused by a group if there was consensus on them. Where the espoused values seemed divergent in line with Schein's (2004) model for cultural analysis, such were not regarded or taken as the groups' espoused values.

The most daunting and intimidating stage in this cultural analysis was how to translate all the data analysed to glean fundamental assumptions. This level of analysis fully addressed all the research questions. The gleaning of the shared tacit assumptions was inferential. I began by checking whether the espoused values that had been identified explained all of the artefacts for each the three organisations – NHS, life sciences teachers and UBY. Espoused values that contributed towards the excavation of fundamental assumptions were those that were recurring and on which there was evidence of consensus. Inferences drawn from the espoused values were thematically categorised and coded using Schein's basic assumptions around which cultural paradigms form. The terminal thematic organisation yielded groups of assumptions that were categorised as: relationship to environment; nature of reality and truth; nature of human activity; and nature of human relationships. From these broad themes and the espoused values, I developed nodes with which I coded deciphered assumptions on what I deemed more context specific assumptions which spoke to the research questions. These nodes and subsequent deciphered assumptions seemed more relevant and pertinent to the life sciences context at NHS. Such assumptions included assumptions about: humanity; social identity; Black people and Blackness; relations; power; truth and reality; time and space; and pedagogy. It was at this stage and from these assumptions that descriptions of organisational (NHS, teachers and UBY) cultures were done and analysis at this point had addressed the first and second research questions.

Description of UBYC was not the end game for this study as my objective was to explore intersectionalities of this culture with the pedagogical setting. This implied another stage in the research design which conformed to step nine of Schein's ten steps of assessing cultures. According Schein (2004) once tacit assumptions have been identified there is need to categorise them according to whether they will aid or hinder the solution of the challenge that is being addressed or in this case explored. This therefore made another stage in my research design essential. In this stage of this focused ethnography, I disaggregated the tacit assumptions and explored the ways in which UBY tacit assumptions influenced the teaching and learning of life

sciences and why the assumptions had this influence. This stage was interpretive and addressed the third and fourth research questions. I referred to this step as interpretation of data.

4.6.4 Interpretation of data

To address the issues that my colleagues had raised and place deciphered UBYC in the context of life sciences teaching and learning, an interpretation of findings in terms of existing theory (Higginbottom et al, 2013) was an imperative. These scholars contend that depth of understanding in focused ethnography can only be brought about when the context of study is interpreted using theory and other empirical studies. Carspecken (1996) further postulates the cruciality of an interpretive stage in ethnographic studies such as this one by arguing that it is essential to conclude cultural studies with assessing the fitting or matching of the data-based reconstructions with existing theory. This stage did not just involve matching findings with broader existing theory but extended to highlight the reasons for the fit or the lack thereof. Thus, as advocated by Carspecken (1996) in this stage I had to build abstractions of the data generated so as to generate analytical inferences that applied to the grade eleven life sciences context at NHS vis-à-vis UBYC. Such theory served to better explain the context and its discourse.

During interpretation, data-based abstractions were cross-matched with analytical and conceptual frames in chapter three. Such concepts included those adopted from: motivational theory; culturally relevant/responsive pedagogy; Bourdieu's social theory and Foucault's notions of power. The frame provided by these ideas did not only provide a lens for my methodology but also illuminated my interpretation of observations made in life sciences classrooms at NHS. Using existing theory, I tried to reconcile relationships between my reconstructions or interpretations and the context in which the participants lived and worked. It was my view that the overall significance of this study rested with its ability to map UBYC, explain why this culture was produced and is reproduced at schools like NHS and explore how the teaching of life sciences was influenced by it. I believed it was this approach that was going to make the findings of this research useful and pragmatic thus conforming to Whatman's (2011) notion that in ethnographic conclusions analytical inferences are more important and more empowering than mere empirical generalisations. This is the dimension that the third and fourth research questions were meant to accommodate.

As I interpreted the data, I used strategies suggested by Bogdan and Biklen (2007). First I looked at published studies for their relevance to my research and tried to be evaluative of my

context. Secondly, I tried to anticipate the assumptions my audience who were to read this work would have and as such I attempted to interpret for them what I had come to understand and had experienced during my research. In this regard I carefully and iteratively considered my research findings. Despite interpreting and placing this work in existing socio-political theory, I still believed in the centrality of my participants' voices during this stage of this study. Thus, during interpretation I centred my participants' voices through its inclusion in the interpretation chapters (seven and eight) through direct verbatim citations. This evident presence of my participants' voices was meant to enhance the credibility through limiting room available for those who read and will read this work to question what the participants meant to say.

4.7 RIGOUR OF THE RESEARCH

Rigour in qualitative research is associated with trustworthiness or truthfulness of the report (Lincoln & Guba, 1985). According to Marshall and Rossman (1999) a qualitative research report is considered trustworthy when findings are a close reflection of what the participants have described to the researcher. Thus my understanding of rigour was that my thesis needed to be a truthful description and explanation of phenomena as they occurred in the life sciences classroom at NHS. In prior sections of this chapter I availed a trail of the methodology of this research and for each of the phases of data collection I attempted to highlight how rigour was accommodated. My view was the detailed methodological description would enable the reader to determine how far the data and constructs emerging from it may be accepted. I was of the view that this detailed methodological description would proffer an audit trail which would allow any reader to trace the course of the research step by step.

Adopting a post-structuralist stance in terms of rigour, I was of the notion that my study had to prove itself worthy by the extent to which it provided authentic accounts of UBY and their teachers' voices as well as my reflexivity in the production of data (Mukherji & Albon, 2010). As I wrote about my positionality in chapter one and raised my voice in various ways in the preceding sections and chapters, I exposed and pre-empted the importance of my voice. Through baring my soul in writing about my positionality I tried to show how my dispositions were included in the research, which I presumed would inform the reader of the extent to which this informed the research process. I did not have regrets with locating myself through my voice in this study as I believed such functional reflexivity provided an alternative to the sterility of detached approaches and instilled rigour in the research (Cruz & Higginbottom, 2013). Thus as I write about matters of trustworthiness in this study I do so giving due regard to my personal

influence on the research and would also want those who judge this work to be fully aware of my role and complicity in its generation. Through taking this stance I am not in any way preventing anyone from judging the research but I wish that their judgement be based on whether I have justified my position, giving due regard to the existence of multiple ways of knowing as argued by the research paradigm informing this work. I do not dissuade the reader from judging whether or not appropriate methods were employed, however, I desire to be judged on whether I have made a correct interpretation of UBYC at NHS. It was my notion that such an approach would convince the reader that the research was to a large degree authorised to draw abstractions about the issue and contexts under study (Hine, 2000). My insinuation from the term authorised is not that captured by Kincheloe and McLaren (2000) but implied making my assumptions explicit to be judged by others who access my work. In adopting such a position in this study I rejected the notion of stable criteria in judging the trustworthiness and embraced the notion that the truthfulness of the study itself as the criteria in focused ethnographies. This criterion complies with one advanced by Higginbottom et al. (2013) who argue that rigour and robustness in focused ethnography depends on data presentation with integrity via researcher self-consciousness and reflexivity.

Despite my notions outlined above I also embraced Carspecken's (1996) claim that all truths have to meet certain credibility requirements derived from structures of human communication to win consent. Cognisant of Carspecken's argument, four verification strategies were invoked in this study all aimed at enhancing its truthfulness hence its trustworthiness.

The first strategy was investigator responsiveness. According to Morse, Barret, Mayan, Olson and Spiers (2002) research is as good as the researcher. The scholars' argument is that the researcher's creativity, flexibility and skill determine the trustworthiness of any evolving study. In line with this I remained open, sensitive to the evolving context and relinquished any ideas that I regarded as poorly supported by data, regardless of the excitement and potential that they appeared to have (Morse et al. 2002). I called upon my experiences prior to, without and within the research context to enhance my insight in analysis and interpretation. Insights were also gleaned from my peers whom I collegially engaged with throughout this journey. Although I made the ultimate interpretation of data I was open to improvement and change as my reading of the context evolved. It was my view that in responding as outlined above I would to a large extent attain optimal trustworthiness and in outlining my role and exposing my effect on the research rigour was promoted.

The second verification strategy I adopted to enhance trustworthiness was methodological coherence. The aim of methodological coherence was to ensure congruence between research questions and the methodological design. According to Morse et al. (2002) qualitative research by nature requires a matching of questions and components of methods, which translates and extends into the matching of data and procedures of analysis. Under this strategy all components were dynamically connected and cyclically interacted with in-built self-correcting mechanisms which resulted in some components being expanded or even altered altogether. As much as I have outlined my methodology in progressively staggered steps, it is important to point out that these steps or stages in design were intricately connected and fed into one another. This non-linearity of the research process was fruitful as it allowed the whole research study to capture data from myriad sources and in multiple forms which is typical of human contexts from an interpretive frame of reference.

Triangulation was another strategy used to enhance trustworthiness. The study needed to generate thick descriptions of participants' perceptions, understandings and voices as such I employed various methods and instruments. Semi-structured, unstructured interviews, observations, documentary analysis and co-generative dialoguing were all used to probe and generate volumes of data that sufficed in capturing the social reality in grade eleven life sciences classrooms at NHS. This triangulation of data collecting methods served to ensure that the most accurate representations of the participants' narratives were expressed and captured, hence greatly enhancing trustworthiness.

The last verification strategy I employed was reflexive dialoguing, particularly during thematic analysis. In this regard I allowed dialogue to evolve between myself and the participants to ascertain whether the participants concurred with the statements I had made in my analysis and interpretation. This was premised on Yin's (2013) idea of communicative rationality under which people are encouraged to exchange ideas and allow the best argument to prevail. This idea is commonly operationalised as member checking. My procedure in this strategy involved confirming and conferring with the participants for reassurance that I had portrayed them factually and carefully without letting my biases influence the data generated. I returned to my participants (life sciences teachers and Top Dog) after transcription and left the transcripts with them overnight after which subsequent meetings were held to cross check how accurately I had captured their input. In these subsequent meetings I queried if I had captured their statements correctly and presented them with an opportunity to share anything additional as I casually presented ideas and findings that were emerging from the data with the

purpose of encouraging them to make comments in less formal ways (Hardcastle et al., 2006). This strategy presented the participants with an opportunity to reflect on their prior statements and provides clarity if they believed they had not been well represented in the transcripts and this opportunity of revisiting the transcripts went a long way in enhancing the rigour of this study. My assumption in this process was that agreement on such a platform was adequate to render trustworthiness to the interpretations as consensus represented a shared understanding of reality. Achieving this consensus spelt for me the convergence of the emic and etic perspective and hence implied a holistic and wholesome analysis and interpretation.

4.8 ETHICAL CONSIDERATIONS

In this section I describe the steps I took to ensure that this study was an ethical focused ethnography. My understanding of an ethical study implied one that neither exploited the young participants nor essentialised them in any way or took advantage of my collegial relationship with my colleagues. Several canons of research ethics are suggested in literature and all seem anchored in three core principles that is non-maleficence (do no harm), beneficence (of what benefit is the research) and lastly, justice (a commitment to sharing risks and benefits of research) (Cohen et al. 2011). Subsumed under these canons are several significant guides some of which I invoked in this study which included: (i) making sure all relevant persons, committees and authorities have been consulted, (ii) permission is needed to make observations and access records produced for other purposes, (iii) all participants have to be allowed to influence the work and the wishes of those who do not wish to participate should be respected, (iv) the development of work has to remain visible and open to suggestions, (v) the researcher has to accept the responsibility for confidentiality and (vi) the researcher has to be explicit about the nature of the research process including personal bias and interests. In the following paragraphs I outline how this ethics criterion was accommodated in this study.

Although I had been a teacher at NHS for over six years, access into NHS as a researcher was not automatic. As a matter of ethics I needed to ensure that the gatekeepers had been consulted and that principles guiding the research study had been accepted in advance. After getting clearance from the university research ethics committee (Appendix 4), the first step which catered for criteria (i) and (ii) was instituted. An application letter was drafted and sent to the Head of Department of the Department of Basic Education, in charge of all public primary and high school education in the province of KwaZulu-Natal, South Africa. Another application was made to the principal of NHS as the custodian of the learners on behalf of the School Governing Body (SGB) (Appendix 5). In both applications I outlined the research aims,

the methodology, what was expected of the participants, a risk and benefit audit, and other matters of confidentiality. Through furnishing them with this information I hoped these significant others would get a good idea of the demands likely to be made on both the participants and the institution. Permission from the Department of Basic Education (Appendix 6) was granted.

As this research involved minors (UBY) I had to take great precaution in protecting the identities of the participants. To address this concern and in keeping with the canons of non-maleficence, justice and recognising criteria (iii–vi), I developed a consent form for both the UBY and the two grade eleven life sciences teachers. In the consent forms I informed them of the nature of the research, the duration, issues of anonymity, storage and security of data, the openness of the project for their scrutiny and perusal as well as the option to withdraw from the project at any stage (Appendix 2 for learners and Appendix 1 for teachers). The learners were also given consent forms for their parents’/guardians’ approval as they were minors (Appendix 3). Despite processing the consent forms prior to the study I had a lingering dilemma as my research protocol was an emerging one. I could not without doubt outline the parameters about which co-generative dialoguing was to proceed. Despite this dilemma I proceeded in this way with the conviction that consent revolved around the participants’ willingness to take part in the study and their acceptance of myself as the researcher.

During dialogic data collection and data analysis, ethical considerations were also undertaken. During dialoguing sessions with the UBY, all groups were mixed gender and expectations regarding respect and confidentiality were shared at the beginning of each of the dialoguing sessions. In analysis and interpretation, pseudonyms were ascribed to each of the participants as data were being transcribed and from this point on the identity of the participants was concealed and all references made to them used the pseudonyms. Feeling the need and obligation to involve participants all the way, transcribed data were shared with the participants during analysis to ensure that their voice had not been violated in any way. In the ways outlined above due ethical considerations were made for this study.

4.9 CONCLUSION

In this chapter I presented the scope of the research through which I outlined the research paradigm, approach, design and the rationale for all that I did. I put forward ethnography in general and focused ethnography in particular as the strategy of choice for this study. In this chapter I laboured to present focused ethnography as an emerging context sensitive research

strategy for time constrained cultural studies in unique settings like life sciences classrooms at NHS. It was my argued opinion in this study that focused ethnography had the capacity to unravel localised cultural worlds such as the one I explored in this study.

After laying out the analytical frame of this chapter through the research paradigm, approach and strategy, I presented the methods employed and their justification and sufficiency in fulfilling the research agenda. As I presented the methods and the how they were deployed I was open about my assumptions, role and explained how my subjectivity may have influenced how data were collected and terminal analysis as well as interpretation of the generated data. I approached rigour and ethical issues in two ways. Firstly, I tried to integrate ethical issues and aspects of rigour throughout the various sections and steps of the research process. Secondly, I devoted the last two sections of this chapter for these two issues as I discussed how they were accommodated.

Chapters five, six, seven and eight address each of the research questions respectively. In chapter five I present findings and describe the context in which UBYC developed at NHS. In chapter six I address the second research question by describing UBYC. Chapter seven addresses the third research question – how UBYC influences the teaching and learning of grade eleven life sciences at NHS. Chapter eight considers why UBYC influences the grade eleven life sciences pedagogic setting in the manner it does which is the essence of what the fourth research question attempts to explore. In the last chapter (nine) as is typical of educational research I place the findings within the larger socio-political context and make recommendations.

CHAPTER FIVE

IN THE MIX - EXPLORING THE CONTEXT

5.1 INTRODUCTION

In this chapter I attempt to answer the first research question - what is the context in which UBYC develops? Cognisant of Schein's (2004) analytical framework, deciphering UBYC needed to proceed from an understanding of the learning situation or problematic context in which the culture was developed. Schein (2004) argues that culture develops as groups try to solve context-bound problems that derive from external adaptation and integration. This research therefore had to interrogate and present the social world in which UBYC had developed, and which was the essence of the first research question. The implicit argument in this approach being that an understanding of the culture could not be based on the culture alone but through consideration of its connection with the context in which it is developed.

From an organisational culture perspective, analysis of the research setting to decipher UBYC needed to consider two organisational levels: macro-level (NHS as a school) and the micro-level (life sciences classrooms). For the latter context the research focus became the life sciences teachers as the structuring agents of the life sciences classroom as a teaching and learning context. It was my view that through focusing on life sciences teachers more resilient understandings of the classroom could be established. UBY functioned and were influenced by the way teachers structured the pedagogic setting as informed by their cultures (Gay, 2010; Emdin, 2010; Ladson-Billings, 1995). It was however important to have a cultural understanding of NHS. From a systemic organisational culture perspective UBY, the life sciences and NHS constituted each other in an ever-evolving dynamic. Thus, UBY were an organisation within an organisation, which was the life sciences on a micro-level and NHS on a macro-level. Similarly, the life sciences classroom, though an administrative appendage of NHS was a discrete organisation within NHS as an organisation. Thus, even though the scope of this focused ethnography was on the micro-context the macro-level could not be regarded as insignificant with regards to what was unfolding in the life sciences classroom. My analytical frame regarded the three organisations as dynamically constituting each other and thus the macro-level had influence on the life sciences classroom and by extension on UBY, by virtue of their location in the life sciences classroom.

Cognisant of this dynamism, both context, that is, the macro (NHS) and the micro (life sciences teachers) were interrogated and analysed using Schein's model (2004) of cultural analysis. Using Schein's model for both, context analysis had to proceed from visible artefacts, through espoused values to basic assumptions. With the notion that the inclusion of the macro-context was to place the target context (the micro) in a broader locus, cultural analysis on a macro-level did not proceed beyond espoused values. It was my view that understandings of the context to this level would render sufficient insight for a holistic perspective on the target context, the life sciences classroom. Such a treatment was based on the need of placing the micro into the macro-context and not to embark on a complete cultural study of NHS. Also considering that this was a focused ethnography, the life sciences classroom was my pertinent context in deciphering UBYC, even though a global perspective was to broaden explanations of what was unfolding at a micro-level. However, cultural analysis of the micro-context proceeded from artefacts, espoused values to basic assumptions.

The following presentation of findings therefore begins by laying out the macro-level (NHS) artefacts and espoused values as suggested by Schein (2004). From this macro-level analysis, the presentation proceeds to the life sciences teacher, whom I regarded as the architects of the micro-context. As already argued, life sciences teachers' artefacts, espoused values and basic, tacit assumptions were sought in an attempt to capture the context in which UBYC was or had developed. This micro-context was also subjected to Schein's model of cultural analysis – artefacts, espoused values and basic tacit assumptions. After deciphering the basic tacit assumptions of the micro-context, the findings were interpreted and discussed in an attempt to capture the anatomy of the context in which UBYC was developing.

5.2 THE MACRO-LEVEL - NORTHLEA HIGH SCHOOL

Employing Schein's model of analysis in this section I present the artefacts of NHS under several sub-headings before I present the espoused values.

5.2.1 Artefacts

Under artefacts I describe the macro-context through what I observed and captured, what I was told and what is documented about the macro-context. I begin by presenting the history of the school, its organisation, curriculum and finish by relating a typical day at NHS. It was my belief that through this approach an organisational understanding of NHS would be attained. Despite most of the data collection having been done in 2014 some pictures of fixed artefacts were captured in 2016. Such pictures included those of school signage, aerial view of

the school and some permanent features associated with the school's functionality such as established committees.

5.2.1.1 Artefacts: The story of Northlea High School

From archival materials the following history of NHS emerged. Northlea High School is one of the many schools that are part of South Africa's apartheid legacy of racial segregation. Based on the racist legislative instruments of that dispensation as directed by the White-dominated House of Assembly, NHS catered solely for the education of English-speaking, White children. The story of NHS began in 1906 when Leander Primary School was built to cater for the primary education needs of the English settlers who had moved to this port city due to the expansion of British influence in South Africa. After completing primary school education, the learners used to go for high schooling in other suburbs, until the community decided to have a high school adjoining the primary school with the same name. However, on 13 December 1954 the name of Leander High School was changed to Northlea High School (NHS).

Initially NHS was a co-ed school, however, before long it could no longer accommodate the English-speaking White children from the borough who needed high school education. The local government then in 1969 split Northlea High School into Northlea Boys' High School and Northlea Girls High School, locating the boys' high school on the old site of another old defunct primary school but the schools continued and still share the same badge. Thus, the former Northlea High became a girls' only school – and still to date is known as Northlea Girls High School. Even though Northlea Boys' High School was a boys' only school for over three decades, in 2004 girls were re-accepted into the school and the name reverted to Northlea High School – (NHS).

NHS catchment area was the six White middle-class suburbs that surrounded it, but with the integration of various education departments in the 1990s, the catchment area of the school has extended beyond the borough with learners commuting from the surrounding Indian and African townships. In 1992 NHS enrolled its first two Black learners. The average enrolment prior to the enrolment of Black learners was about one hundred and fifty boys. Other than Black learners, Indian learners were also making significant enrolments as their parents had started buying properties in the suburbs of Northlea after the Group Areas Act had been repealed in line with political reforms of the 1990s. In 2002 the school was officially integrated. This move had a dual effect: firstly it raised the Black learner population at NHS but it also precipitated

drastic declines in overall enrolment of White learners due to white flight to other areas. The high level of attrition threatened the viability and sustainability of the school which prompted the Department of Basic Education (the legislated body to run primary and high school education) to convert NHS into a co-ed English-medium school which led NHS to open its doors to female learners in 2004. As portrayed in enrolment statistics in chapter one, the demographic shift started and continues, as of January 2016, NHS' Black learner population has peaked at 65%, with Indians at 20%; Whites at 14% and Coloured at 1%.

5.2.1.2 Artefacts: Organisational arrangement of NHS

The South African Schools Act (SASA) of 1996 provides for a school principal who is the chief executive officer for public schools in South Africa. The principal as the chief executive officer of the institution has the mandate to oversee curriculum and extra-curriculum issues within the school and is the link between the Department of Education and the community. This office at the time of this study, January to September, 2014, was occupied by a Mr Mlungisi Xaba who, as I found out later happened to be the first Black principal of NHS since its establishment in 1969. Assisting Mr Xaba, was the deputy principal Mr Ogden, an over fifty something English white man who was seconded to the school six months after Mr Xaba after the untimely departure of the incumbent deputy principal. Mr Xaba and Mr Ogden were regarded as senior management at NHS and were assisted in running NHS by four Heads of Departments (HOD) of various curriculum disciplines.

The teaching work of the school was organised through the subject departments headed by a specialist in that subject or one of the subjects in that department. For example, life sciences fell under the science and mathematics department and the HOD was a mathematics specialist. The HODs had middle-management responsibilities which included departmental administration, resources procurement, inventory maintenance and monitoring the quality of curriculum implementation across the subject disciplines under their jurisdiction. In these matters the HODs liaised and worked closely with the principal. Each HOD had subject teachers under him (they were all male) who were regarded as subject specialists even though some of them taught more than one subject in the department. For example, Ms Perkins and Mrs Moosa, my key teacher participants taught life sciences and well as natural sciences in the lower grades in 2014, during this study.

At NHS there was also a system of horizontal control with a year head or grade controller appointed from amongst the teachers to be responsible for learner welfare in each grade. The

core function of year heads was to monitor the academic progress, behaviour and general etiquette of learners in their grade. The year heads reported to HODs, and collectively they maintained discipline in the grade, with the latter reporting to senior management. According to policy documents on the organisational structure such an organisational arrangement was designed to meet the needs of learners with varying abilities.

There were two phases in the school curriculum: the General Education and Training Band (GET) and the Further Education and Training Band (FET). The GET phase included Grade Eight and Nine. In line with the Curriculum Assessment and Policy Standards (CAPS), a (revised curriculum from 2010), there were eight learning areas in GET: Language, Literacy and Communication (LLC); Mathematical Literacy and Mathematical Sciences (MLMMS); Natural Sciences (NS); Human and Social Sciences (HSS); Economic and Management Sciences (EMS); Technology (TEC), Arts and Culture (AC) and Life Orientation (LO). At NHS learners in this phase had an option of taking either Afrikaans or IsiZulu as their First Additional Language.

The FET phase consists of Grades Ten, Eleven and Twelve. In this phase the common curriculum was reduced to seven subjects. Every year the school availed a list of subject packages from which grade nine learners chose their grade ten combinations. English was regarded as the home language for all learners at NHS, together with Afrikaans or Isizulu. These home languages, together with Life Orientation and Mathematics or Mathematical Literacy were the four compulsory subjects. Learners were then allowed to choose three of the following subjects: Physical Sciences; Life Sciences; Geography; Accounting; Business Studies; Engineering Graphics and Design; and Tourism. Learners were in the FET phase for three years and were required to compile a portfolio of work over the three years for every subject.

To ensure that learners worked consistently throughout the year, the school devised a system and developed a policy whereby all grades wrote tests on a regular basis. Some of these tests were regarded as formal assessments and contributed towards the learners' final year marks, which were used to determine whether they progressed to the next grade. Grades Eight to Eleven wrote a full examination in November. Grade twelve learners wrote the National Senior Certificate examinations, which was the school leaving examination. All learners attending NHS were expected to write assessments and if a learner was absent from any

assessment, a medical certificate was required for him or her to be given another chance to be assessed.

With regards to extra-curricular activities, the school had a large number of thriving clubs and a full programme of extra-curricular activities in which learners were expected to participate. Sporting clubs or codes as they were referred to at NHS included cricket, tennis, hockey, basketball, soccer, volleyball and rugby. Rugby and cricket were historically the mainstay of sporting codes at NHS, but as of 2014, soccer was coming up, with the teams being predominantly made up of Black learners. Involvement in sport at the beginning of the year was voluntary but once learners opted for a particular extra-curricular activity it was then registered as a commitment and they were expected to honour the commitment for the year. Such commitments were taken seriously to the extent that absence from a training session without a medical certificate attracted sanctions such as detention. The detention system required learners to sit for an hour after school on Monday, Tuesday, Wednesday, or Thursday. Offending learners were made to sit quietly and not engage in any other activity for the hour. At NHS learners whose academic achievement was below standard or whose behaviour was deemed to discredit the school in some form, were temporarily or permanently suspended from some or all extra-curricular activities until their academics or behaviour improved.

As I sifted through archives I came across the school's prospectus in which the cultural blue-print of the school was captured. In this document NHS annotated cultural aspects and their integration within school life. Below is an excerpt from the prospectus that purportedly captured the "cultural activities" at NHS.

There is strong emphasis on the cultural aspect of life at Northlea High school. Debating and Public Speaking is encouraged. In addition, we have a Chess Club. Outings and excursions of an educational nature are undertaken and visits from various outside groups or agencies on a range of topics are arranged. Learners participate in Mathematics and Science Olympiads. We have a Students' Christian Association which invites guest speakers to address learners on various matters of particular relevance to developing teenagers (NHS 2015 prospectus, p. 4)

With regards to communication protocol, learners were expected to communicate through their home / class teachers or year heads who then forwarded it to their respective HODs and then to senior management. When teachers had matters to be addressed it was usually through the HODs and then to senior management however, in some cases teachers did not observe this communication protocol and proceeded directly to Mr Xaba or Mr Ogden. Management and teachers did not see parents without an appointment. In the first instance parents were supposed to direct written requests to the relevant year head or subject teacher. If

they were not satisfied with the manner in which the matter was handled, direct requests in writing were then made to Mr Xaba. As a rule, no anonymous telephone calls or letters were entertained.

5.2.1.3 Artefacts: A walk through ‘the fort’ called NHS

NHS was located away from the major highways that served the port city as well as the suburb of Northlea. It was situated at the confluence of two arterial roads that cut through the suburb linking it to other surrounding suburbs. By virtue of its location NHS was accessed from two directions, either from the east or from the south. When one came from the east you would come across the first gate previously used by learners. This gate during the study had been permanently sealed with all traffic being directed to the third gate about thirty metres away from it. In between the sealed gate and the third gate was the staff gate, clearly marked, “STAFF ONLY, PLEASE USE NEXT GATE”, (Figure 5.2). This gate was remote-controlled with each staff member having a personalised access key.

At the third gate there was a vehicle and a pedestrian gate which were manually monitored and controlled by two security guards, one controlling pedestrian traffic and the other vehicles. The latter had a visitors’ log book in which details of the drivers and vehicles were captured. The same guard captured details of pedestrians on foot who were not learners or members of staff. This gate was the only access point for everyone else other than staff into and out of NHS. The rest of the perimeter had a three metre high concrete palisade and because of this secure access arrangement. During monological observation I noted that this security arrangement led NHS to refer to the school as the ‘fort’.



Figure 5.1 Aerial view NHS showing the quad at the centre



Figure 5.2 Staff gate at NHS

After details had been captured at the gate, visitors with a visitor tag visibly stuck to their breast-pocket were directed onto a foot-beaten path that flanked the staff car park and led to a double entrance that led into the main foyer. This foyer was an *out of bounds area* for learners unless they had a special *permission card* from a teacher. In terms of size, the foyer was about sixty square metres. It had staff ablution facilities to the south, a screened reception window to the north, the school's *wall of fame* extended on the eastern wall of the foyer and extending along the entire length of the west end of the foyer, was a glass on wood entrance with multiple entrances for those coming from the staff car park, but usually only one door was left open for staff convenience.

For any visitor to NHS, the walls of the foyer were set up and laid out to present the story and history of the school in a nutshell. The south wall had portraits of all the previous principals of NHS, prior to Mr Xaba. There were seven portraits, six men and one woman whose demise opened the way for Mr Xaba. All these principals were White and had English surnames. The wall to the south had the reception window which was about one and a half metres long and high. Above the window hung various certificates of achievement awarded to NHS over the years by the Department of Education for academic excellence. The most recent certificate was awarded for 2016 when NHS was recognised as the most improved school with

a ninety percent pass rate. Most visitors to NHS did not go beyond the foyer where they were attended to by the receptionist behind the reception window. Access beyond this point was restricted in that visitors were physically accompanied to Mr Xaba and Mr Ogden's offices. If they had an appointment with any teachers, the meeting was conducted in the western corner of the foyer.

The *wall of fame*, which was the eastern wall of the foyer had three highlights: the portrait of the first democratic President of the Republic of South Africa which was donated by the matriculants of the year 2009; the trophy cabinet with all the silverware the school had accumulated in various sporting disciplines since its founding; and the polished pinewood panel on which the sportspersons, head prefects, captains of cricket and rugby as well as the outstanding matric learner (Dux) for the different years were inscribed. On the extreme northern end of the wall of fame were bricks bearing names of individuals who had directly made financial contributions to the development of the school. Below these names were portraits of the first cricket and rugby teams for the years up to 2006, beyond which NHS had ceased to be a powerhouse in these sporting disciplines. Below are some pictures of NHS foyer described above.

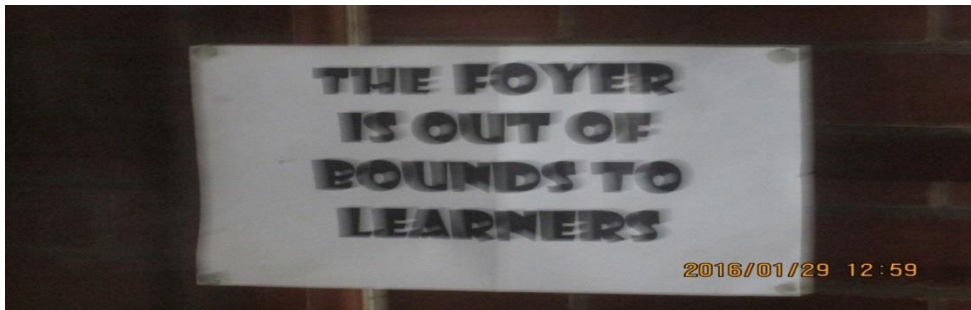


Figure 5.3 Sign at entrance and exit of the main foyer



Figure 5.4 Permission card

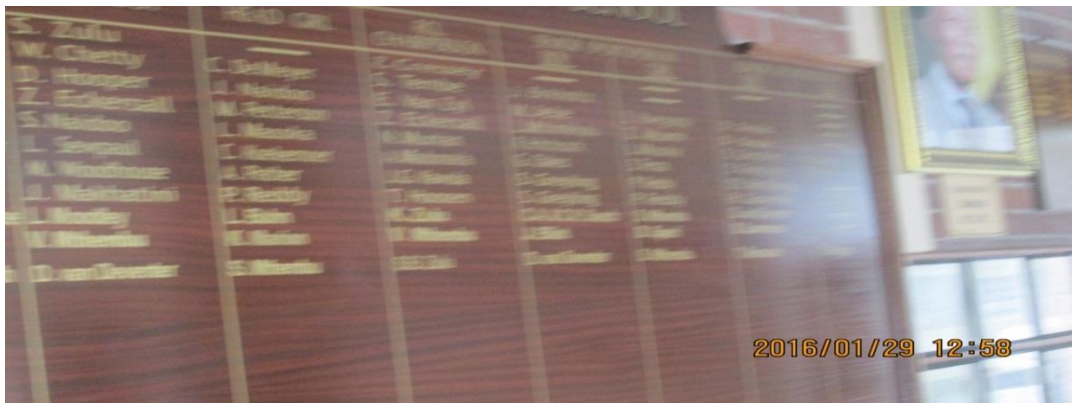


Figure 5.5 NHS foyer (east wall - wall of fame)



Figure 5.6 NHS foyer (south wall past principals and staff)



Figure 5.7 NHS foyer (east wall – trophy cabinet)



Figure 5.8 NHS foyer (wall of fame- first teams)

Past the foyer on the north side was a double door and as you exited this door there were two alternative routes. Based on the signage I termed these the green and red route (despite the arrow being yellow for the latter).



Figure 5.9 Arrow indicating the red route (staff route)

The corridor leading beyond this sign was clearly marked and learners were prohibited from using it as seen in the poster below (Figure 5.1.10)

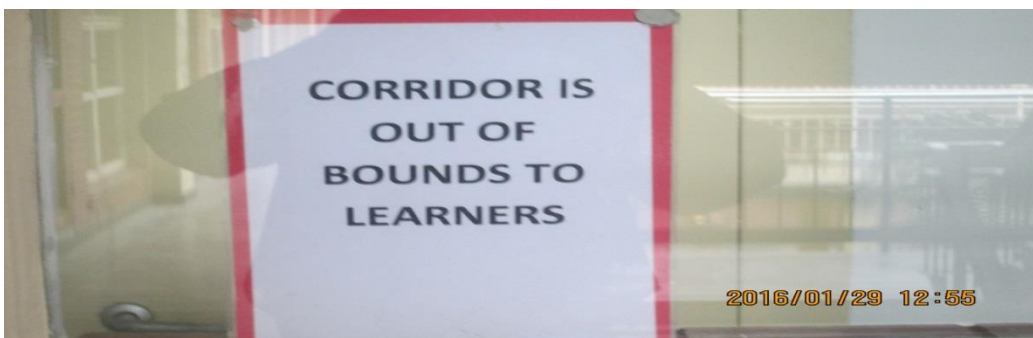


Figure 5.10 Access restriction sign for learners on the red route

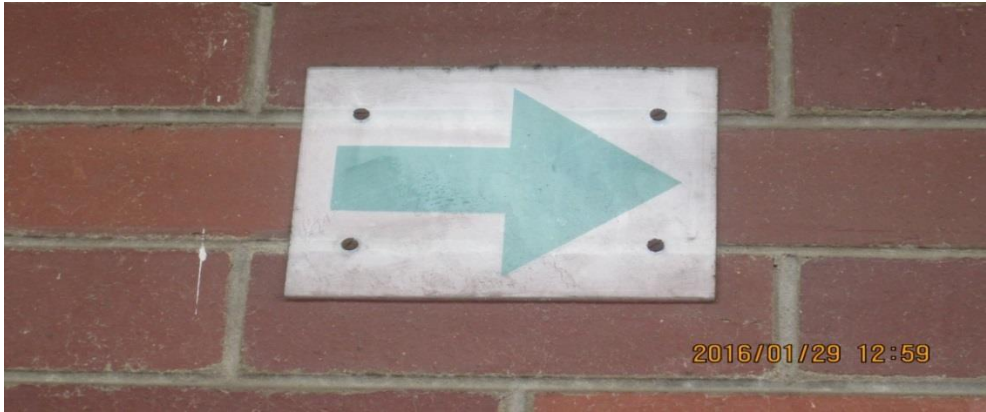


Figure 5.11 Arrow indicating the green route (learner route)

On the red route you proceeded straight into the staff corridor from which you could immediately turn left into the administration suite where Mr Xaba and Mr Ogden's offices were situated, together those of their support staff. Learners were not allowed on the red route and could not proceed beyond the arrow. Proceeding straight on the red route past Mr Xaba's office, one passed the bursar's office to reach the staff lounge. The green route from the foyer immediately turned right and opened on the southern end of a quadrangle (referred at NHS as the quad) which was an open secure space at the centre of the school. There were three levels around this quad and despite the level, all doors of classrooms which lined the quad opened up into this open paved space. During break time, learners would buy from the cafeteria on the ground level of this quad and would eat and interact in the quad. However, some would opt to go out of the quad to the sports field. Boys were allocated the cricket field to the east and girls the rugby field to the west of the school buildings. Teachers and prefects were allocated duty points during break in all these areas. A partial view of this quad is shown below (Figure 5.1.12)



Figure 5.12 View of the quad and how classrooms open up to it

There were several pathways that criss-crossed the quad which facilitated learner movement during lesson change-overs. Learner ablution facilities and their canteen were located within the quad. At the ground level were two gates through which the learners accessed sporting facilities and school grounds during breaks. These gates were opened at six in the morning, locked during class times and opened during breaks and home time. The teachers' corridor flanked the quad to the right and had a glass panel that ran across its entire length. This glass panel provided ample view of all that was happening in the quad for anybody walking along the teachers' / staff corridor. This vantage point allowed teachers and management to monitor learners in the quad during break and lesson change over. One of Mr Xaba's doors also opened onto this corridor, a feature which also allowed him to monitor events in the quad. Occasionally he would open a window on the glass panel and call out instructions to learners in the quad.



Figure 5.13 Gate locked during class time at NHS

Once contracted, each teacher was assigned a classroom and given the classroom's key. All keys were only surrendered at the end of the year when schools closed for the long holidays. Thus, teachers had unlimited access to their rooms and organised them as they deemed fit. Twenty-seven generic classrooms were used for instruction at NHS, despite the school having room for greater occupancy. Classrooms which were not part of the main school building were not being used in 2014, due to lower learner numbers as a result of attrition within Indian and White learner population. All the classrooms had high windows on the internal wall facing the quad, such that as you moved along the corridors that hung over the quad you could not see into the classrooms. Bigger windows meant perhaps for aesthetics or increased ventilation were located on the external walls. Classrooms were marked using room numbers and specialist

rooms like the woodwork room, the audio-visual room and the science laboratories were marked as such. All classroom doors had a glass panel at shoulder height for the teacher to see who may be knocking. Some teachers covered this glass panel with opaque paper boards for more privacy as shown in the figure 5.14, below.



Figure 5.14 Door with a sealed glass panel at NHS

5.2.1.4 Artefacts: A day at Northlea High School

During school days the caretaker of NHS opened the learners' and visitors' gate at six o'clock in the morning. Learners using various modes of transport trickled into the school yard and milled around as they in various spots within the school precinct as they waited for the official commencement of the school day. The trickle turned into a flood between a quarter to seven and half-past seven. Staff members were expected to be at school by half past seven for a daily staff-briefing scheduled at twenty-five minutes to eight every morning. School started officially, with the bell ringing at quarter-to-eight (07:45hours) in the morning and finished at ten-to-three (14:50 hours) in the afternoon every week day, with the exception of Friday, when it finished at quarter past one (13:15 hours), to compensate for extra time put in during the week. Staff consensus was that on Friday some had religious observances which affected school functionality, as such it seemed a viable option to structure times as above.

Staff members milled in the staff lounge as they awaited staff briefing. This seemed to be their chance to catch upon the previous day's events and also a forum for them to establish issues that they intended to raise in the staff briefing. The staff briefing started promptly at the scheduled time and was chaired by Mr Ogden, with Mr Xaba sitting alongside him. Mr Ogden made announcements for the day which included extra-curricular events, special meetings if any, teachers absent, matters of detention and teachers on break duty. If Mr Xaba had any announcements that concerned overall school business, he made these after Mr Ogden's brief. An observation that I made in these briefings was the use of titles *sir* and *ma'am* instead of Mr, Mrs, or Miss. Every staff member seemed to observe this protocol, even when they referred to their friends sitting right next to them. It was interesting to note that outside this forum everyone was on first name basis, except when interacting with senior management where the use of the title, *Mr* and *sir*, persisted. Senior management addressed teachers during these meetings using the same protocol despite their elevated official positions. I felt that the protocol observed in these briefings was highly formalised. Proceeding in briefings also seemed linearly timed with Mr Xaba encouraging Mr Ogden to move through the announcements and at exactly seven forty-five Mr Xaba closed the briefing session and released everybody to proceed for registration.

During morning briefings staff members could interject and raise matters both within and without the announcements being made. If it happened that senior management could not immediately resolve the matter, or if the matter concerned all staff members, such matters were opened up for staff debate until consensus was reached. What was observable in the morning briefings was that matters were collectively resolved and adoption of resolutions was done unanimously. In some instances, resolutions in staff briefings were adopted and added to school policy. One such issue that became policy in one of these morning briefings was the issue of Black girls' hair. Black girls at NHS had written a letter and wanted the staff and school management to consider a revision of the school's hair policy. During the morning briefing on the 12th of February 2014, some members of staff raised their concern that Black girls' hairstyles were not conforming to the school's dress code policy. This matter raised a heated debate which nearly polarised the staff. On one end were staff members who argued that the girls had to comply with the code which they felt was infallible and non-negotiable. The other members were for a re-examination of the policy which they felt had been overtaken by demographic transformation since the inception of the policy in 2004. They argued that the

policy had been mooted before the Black girls had even been enrolled and as such it was exclusionary. An excerpt of the letter that prompted the discussion is shown below.

HAIR POLICY

We the African female learners at High School would like the staff and management of school to hereby accept our proposal on how our hair should be done when we come to school.

We have been constantly by reprimanded by educator at school on how our hair should be kept. We understand the school code of conduct but we would like to be heard on this important issue.

Our culture is important to us and ~~we record no disrespect to any educator~~ about our hair and braiding. Our hair is always tied up and is always neat.

We would like for you as the principal and SMT with the Governing body to listen to us and accept our request and ~~hope our request is favourably looked at and allow us African girls to use braids~~ which will be kept neatly all the time and according to the code of conduct.

Thank you.

Figure 5.15 The letter from Black learners which influenced hair policy

This matter was discussed and an ad hoc committee was set up. The committee constituted from the morning briefing recommended changes, which all staff agreed with and the policy was amended with regards to this matter. Such was the nature of morning briefings at NHS and all staff members cognisant of their importance made it a point to attend and actively aired their opinions.

After the briefing, teachers who had classes to register (home / form teachers) proceeded to their classrooms for morning registration. At eight o'clock the bell was rung and lessons began. At this time the learners' gate was also locked and learners who came after this time were considered late and were not attended to, irrespective of reasons and were only admitted

into the school premises at the end of the first lesson, at five minutes to nine. As the latecomers came in, their details were captured and they were issued with a late-slip (Figure 5.16) which they gave to their home teacher during second registration at the end of the day. If a learner failed to submit this late slip, they were marked absent for the day and required to bring a notice of absence from home explaining their absence from school. Lessons at NHS were fifty-five minutes long and were put into a three-two-one format that is, three lessons before a thirty minute lunch break and the two lessons after the lunch break and another smaller break and then the last lesson. After the last lesson, learners proceeded to their home classes for end of day registration. At ten minutes before three the final bell was rung and the day ended for everyone at NHS.

<u>LATE TO SCHOOL- HIGH SCHOOL</u>	
NAME: _____	GRADE: _____
DATE: _____	TIME ARRIVED _____
FRONT OFFICE SIGNED: _____	
CLASS TEACHER SIGNED: _____	
N.B. LEARNER TO HAND THIS FORM BACK TO THEIR REGISTER TEACHER AT THE PM REGISTRATION.	

Figure 5.16 The late slip

The overall school life at NHS seemed prescribed and governed by the school's code of conduct and through general announcements over the school's intercom which was linked to every classroom. There was a high propensity for maintaining order and predictability at all times. The code of conduct as an instrument for order and control at NHS claimed in its introduction that it was spelling out the learners' rights as spelt out in the South African Constitution (Act 108 of 1996), the South African Schools Act (Act No 84 of 1996); the KwaZulu-Natal School Education Act (Act No 3 of 1996) and the guidelines published by the Department of Education (Notice 776 of 1998). The code of conduct informed learning climates, handling of school property, examination conduct discipline and punishment procedures, matters of attendance, parental responsibilities, general school etiquette, values and traditions and even demarcated and restricted learner movement within the school with some zones declared out of bounds and marked in yellow, (Figure 5.17).



Figure 5.17 Yellow spot marking the out-of-bounds areas

Every NHS prospective learner was furnished with the code of conduct before she / he was enrolled at NHS and had to accept it and through appending his or her signature on the enrolment form pledged to abide by it and uphold it.

5.2.2 Espoused Beliefs and Values at NHS

According to Schein (2004), cultural analysis cannot be detached from one's reactions as one's emotions and biases are intricately interwoven with the process. Inherent in Schein's analytical framework is the argument that it is impossible and undesirable to present cultural analysis with total objectivity. I am making this point at this juncture because as I highlight espoused values that I encountered at NHS, I present what I perceived to be the espoused values of the macro-context from my worldview. Through my extended stay, document analysis and observation I managed to elicit some espoused values that seemed to oil the machine called NHS. I inductively inferred these espoused values as I tried to understand the various artefacts that I encountered at NHS.

From the *wall of fame* and through its mission statement and vision statement NHS seemed to place much value on excellence. In its mission statement, NHS strived for academic excellence and in its vision statement, it endeavoured to be the leader in academic, social, cultural, ethical curricular and extra-curricular development. Captured in the school motto *CONABOR* which was translated *I will try* the school not only valued excellence but

competitiveness also, and any member of NHS who achieved or excelled at whatever activity was given individual recognition within the school.

Closely related to the value and belief in excellence I also noticed that the individual was at the centre of all that happened at NHS. The mission statement gave due regard to the individual and the *self* as was captured in the mission statement. NHS strived to produce self-disciplined and self-motivated individuals whom the school believed would be able to take their place in society. Individual opinion was valued and called for in almost all everyday school decisions. The individual and individual effort was valued at NHS to the extent that even when teachers did something in committees, acknowledgement and recognition was given to individuals who constituted that committee instead of just recognising and thanking the committee. So valued was the recognition of the individual that if someone forgot any one member of a committee during a vote of thanks, they would profusely apologise despite the whole committee having been given due recognition.

As much as individualism was valued and espoused at NHS, consensus and the importance of the collective was also extremely valued. From the artefacts, matters in the morning staff briefing or formal school meetings were deliberated with individuals thrashing out their ideas. Sometimes deliberations were confrontational and antagonistic, ultimately Mr Xaba would then say, *what then should WE do?* Individually the teachers made suggestions for a way forward and from all the input one grand idea would emerge. The idea around which the staff rallied was usually adopted. Thus, despite senior management having the authority to make declarations and arbitrary pronouncement, life at NHS was governed by consensus. This espoused value was further observed in the establishment of committees for almost everything that needed to be done. Some of the proposed committees for 2016 which were similar to those of 2014 are shown below (Figure 5.18).

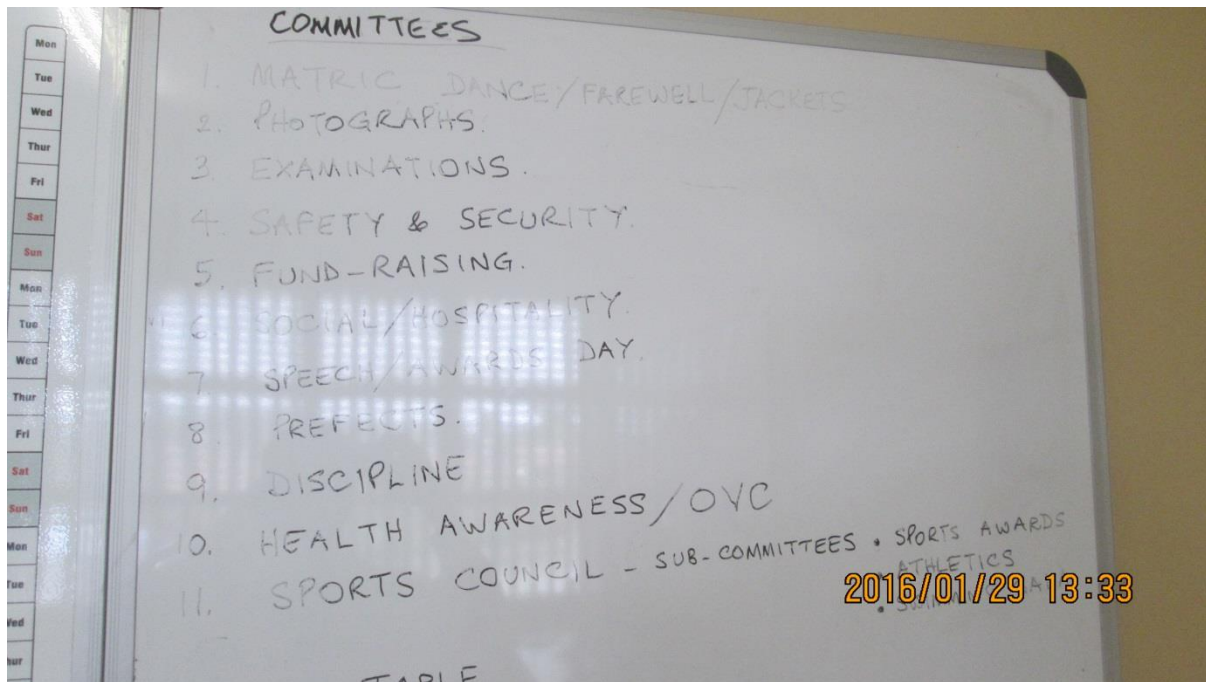


Figure 5.18 Some proposed committees on a board in the staff lounge at NHS

Even though the individual and the *self* were celebrated at NHS there seemed to be veneration for authority, seniority and protocol. Seniority was greatly valued. Such was the strength and value placed on seniority that respect for authority was called for down to the learners being obliged by the code of conduct to recognise the seniority of their class captains. If anybody breached protocol they would be asked to go back and follow established protocol. This extended even to discipline protocols with misdemeanours being ranked into levels. Level one offences were dealt by the prefects and teachers, level two offences by the teacher and year heads, level three and four offences were dealt with by Mr Ogden and Mr Xaba with some assistance from the year heads and teachers as illustrated in the excerpt below (Table 5.1). Thus, following the chain of command was greatly valued at NHS.

Table 5.1 An extract from the school's code of conduct

MISDEMEANOUR	ACTION BY	CONSEQUENCES
LEVEL 2 :		Detention will be 2 hours, unless otherwise specified
Repetition of level 1 offences where disciplinary action has been deemed to be ineffective	Educator / Prefect	Detention
Swearing at prefect / fellow learner	Educator / Year Head	Detention
Disrespect / Insolence / Cheek	Educator / Year Head	Detention
Ignoring specific instructions	Educator / Year Head	Detention
Damage to school property	Year Head	Repair / replace / community service (2 hours minimum) Educator control / cleanup / detain
Pea shooting, throwing chalk, paper or objects	Educator / Year Head	Make up time / advise parents
Truant from class	Educator / Year Head	Detention
Dishonesty	Educator / Year Head	Detention / advise parents
The carrying of cigarettes when in school or representing the school	Year Head	Detention
Associating with smokers	Year Head	
MISDEMEANOUR	ACTION BY	CONSEQUENCES
LEVEL 3 :		
Repetition of level 1 and/or 2 offences where disciplinary action has been deemed to be ineffective	Year Head / Deputy Principal	Interview parents
Racism	Year Head / Deputy Principal	Counselling / Apology / Advise parents / Warning Letter
Swearing at or in the presence of an educator and/or parent	Deputy Principal / Principal / Governing Body	Interview parents / Warning letter
Fighting	Deputy Principal / Principal / Governing Body	Warning letter / 2 hour detention
Gambling	Year Head	Confiscate / Warning letter
Attempted assault / indecent assault	Deputy Principal / Principal	SAPS / parents / warning letter and suspension

There was also high value placed on information and recordkeeping. In everything done at NHS, there was always a call for a *paper trail*. Such paper trails would encompass day to day administrative issues that needed to be done, personnel issues as well as information on learners. For everything a record had to be made and it had to go on file. The volume of records necessitated the conversion of one of the classrooms into an archive with shelves reaching to the ceiling. Information was kept in this room for up to ten years after which what was considered obsolete was incinerated. Teachers and prefects were supposed to complete statements of events for any misdemeanour or incident and this information was placed in learners' files as a permanent record. Thus, in the event of the learner being brought to Mr Ogden and Mr Xaba, the file would be retrieved and the paper trail established. The photographs below show the files archive at NHS showing records as far as the 1980s, 1990s and early 2000s.



Figure 5.19 *Some archived documents from the 1970s, 1980s and 1990s at NHS*



Figure 5.20 *A partial view of the archive showing boxes of learner personal files at NHS*

Rules and absolute compliance to them were an espoused value at NHS. At each and every assembly some rules were spelt out and learners were constantly and consistently

reminded of their pledge to observe the code of conduct. The pre-eminence of rules was encouraged to filter to classrooms. At the beginning of each school year, each class, by consensus and guided by the teacher was expected to have its own rules, which were pasted on the classroom walls. Such rules, despite converging with the school's code of conduct applied specifically to that class. Such rules were not only about housekeeping but extended to other aspects of classroom life also. Learners would have a copy of such rules and keep it in their homework portfolios. Every effort was made to make such copies clear and understandable. At NHS, ignorance of school code of conduct or classroom rules was not an acceptable excuse when learners were caught breaking the rules. When a rule seemed not to be working new rules were immediately drafted. Below are Mrs Moosa's classroom rules (Figure 5.21)

CLASS ROOM RULES

- 1. Each person will have his / her own stationery and writing materials.**
- 2. No bags on desks.**
- 3. 'Forgot' is a swear word that starts with 'f' and is totally unacceptable.**
- 4. No bullying.**
- 5.1 10% per day will be taken off for work handed in late.**
- 5.2 Work that is three days late will not be accepted.**
- 6. Do not touch another person's child.**
- 7. Do not touch anybody else's private property.**
- 8.1 Do not chew.**
- 8.2 No eating or drinking permitted.**
- 9. Do not tap on any surface with anything.**
- 10. Nobody leaves the class room.**
- 11. Good manners will be practised at all times.**
- 12. No yawning or stretching.**

Figure 5.21 Mrs Moosa's Classroom rules

At NHS traditions were also greatly valued and no opportunity was lost to emphasise this espoused value. This value was usually captured by one of Mr Xaba's slogans - *bringing back the glory* of NHS. Most of the teachers had been at NHS for an average of twenty years, with

some having been at NHS from 1969 when the school was founded. It was characteristic in the staff briefings for teachers to exclaim, *in the Good Old days! Or in the past we used to!* The value of tradition was also espoused when some changes were being mooted, when someone would interject, *we have never done that here; or that will not work here; or that does not work here.* Some members of staff were more direct and would tell Mr Xaba or Mr Ogden that whatever they were trying to institute would not work because that's not how things had been working all these years before their coming, so why change now? It was my feeling as I observed these pronouncements that to some extent NHS was stuck in the past as some teachers (who seemed the custodians of those traditions) jealously safeguarded traditions from change.

Privacy and the sanctity of personal space were other strongly held beliefs and espoused values at NHS. In the staff lounge there was a silently agreed seating arrangement and senior management would tell who was absent by just noting an empty chair. Spaces were defined both at the individual and group level. Staff members would cluster in fixed zones within the staff lounge. Sanctity of personal space extended beyond the staff lounge to classrooms. I noticed three things at NHS. Firstly, teachers didn't change teaching rooms, even when the classrooms were not specialist rooms. This led to classrooms not being mentioned by room numbers but by teachers' names because they had become so personalised. It was very interesting that when Ms Perkins (one of my research participants) retired, her laboratory continued to be referenced by her name despite it being used by a new teacher. In line with this value I also observed that when staff members visited each other they did not enter each other's classrooms, even when there were no learners or teaching going on. A visitor would knock and would wait for the other party to come to the door and business was conducted at the door. Lastly, the espoused value of privacy and sanctity of personal space was confirmed by teachers sealing the illumination panels on their doors.

The espoused value of privacy and sanctity of personal space seemed closely related to the last espoused value I observed at NHS, that of veneration of expertise. Teachers, by virtue of their disciplinary specialisations were regarded as experts. Their experience and duration of stay at NHS also placed them on a pedestal of seniority and even accorded them more veneration amongst their peers. I observed that level one teachers, by virtue of their professional expertise and years spent at NHS, had more clout and voice in the staff briefings than senior management. These observations in this context affirmed the persistence of this espoused value.

In the introductory part of this chapter I argued the rationale for not proceeding to the tacit assumptions of NHS. I cited the protracted nature of the study, the limitations imposed by the methodology opted for in this study and the nature of my research questions. Consideration for these three aspects led me to explore the macro-context to Schein's espoused values level of analysis. My intentions in such an analysis were to get the feel of NHS, an aspect I thought would illuminate the exploration of the life sciences classroom. After noting the artefacts and espoused values of NHS I proceeded to explore the micro-context (the life sciences teachers in life sciences classrooms). In the next section of this chapter using Schein's frame I present the life sciences teachers' artefacts, espoused values and basic tacit assumptions under the theme – encounters in the life sciences classrooms.

5.3 THE MICRO-LEVEL - ENCOUNTERS IN THE SCIENCE CLASSROOMS

Exploration of life sciences classrooms in terms of Schein's organisational analysis transcended the meso and micro-levels. However, in this study it was my view that in terms of UBYC development at NHS, the life sciences classroom was the micro-context. It was the immediate setting in which UBYC was developing even though in terms of organisational complexity it would have been the meso-level. It was with this notion that I considered the life sciences classrooms as the micro-context.

As I explored the life sciences classrooms as the micro-context, cultural analysis proved to be a challenge, particularly with regards to artefacts. I noticed that some observations had the potential to be artefacts for the life sciences classrooms as well for UBYC. For example, descriptions of seating arrangements could be presented as an artefact for the setting in which UBYC was developing or an artefact of UBYC. In addressing this potential overlap, I decided during data analysis as I reflected that the placement of such transitional artefacts had to depend on their utility in answering the research questions and interpretation. It is from this notion that this report was constructed.

In presenting the artefacts of this context I begin with the life sciences teachers' narratives. In these narratives the two teachers wrote about themselves, and as life sciences teachers at NHS teaching UBY. As part of the artefacts, I also describe the physical settings and observations made in the life sciences classrooms. After presenting the artefacts I describe the life sciences teachers' espoused values. From the artefacts and espoused values I inferred their operative fundamental assumptions. In deciphering the life sciences teachers'

assumptions, I used Schein's (2004) analytical framework juxtaposed against standards espoused by my conceptual framework.

5.3.1 Artefacts

In this study I had the privilege of accessing two life sciences classrooms that were the domains of Ms Perkins' and Mrs Moosa. I met Ms Perkins at NHS when I took the Physical Sciences and Natural Sciences teaching position at the school on the 1st of August 2008. She was the senior science teacher and the subject head. As the subject head she was in charge of all the science disciplines and reported to the HOD of Sciences and Mathematics. Ms Perkins was the only life sciences teacher, but as more learners opted to do life sciences in grade ten, the need for another life sciences teacher arose and in 2009 Mrs Moosa was moved from the GET phase into the life sciences.

When I embarked on this study I had no better person than Ms Perkins to tell the story of NHS and life sciences education at NHS. She had been in this school fresh from teacher training in 1973, just four years after the school had been established. When I asked for her input in this research she had been at NHS for over forty years. She had been at NHS for so long that some life sciences learners (not just UBY) behind her back referred to her as fossil. One amusing fact was that Ms Perkins had been Mr Ogden's (the deputy principal) Natural Sciences teacher.

On the 16th of January 2014 as schools opened, I visited Ms Perkins and Mrs Moosa and informed them of my research study and intention that they become part of it. I informed them that I needed them to tell me their stories, both as a White and Indian female South Africans and as White and Indian life sciences teachers at NHS. I asked them to write everything, below are parts of their narratives. Other parts of their narratives are included in other sections of this work where I adjudged they had greater utility. These are their narratives, verbatim:

5.3.1.1 Re-living the good old days with Ms Perkins

I was born on 29 January 1951 in Hartley, the fourth child of seven – five boys (3 older than I), and one sister. The Cedars (our farm) was a child's paradise! By the time the boys were ten they could drive tractors, etc and had pellet guns. By 12/13 they were allowed to use .22 rifles and could hunt buck, monkeys, guinea fowl, etc taking the big Rhodesian ridgeback dogs with them. The girls led a more sheltered life, but we got around!

Both my parents were third or fourth generation South Africans, of British descent. Their English ancestors coming out with the Byrne settlers in the 1860s and my mother's maternal grandfather was a little Yorkshire man who trained in Kew Gardens and came to the Northlea Botanical gardens in 1890 before skipping off to the Kimberley Mines. My older brothers attended Gifford Primary then St Alberts' College. My father converted to Catholicism in his teens/early 20s and

therefore broke the English tradition of sending all sons to Carrington College. I attended St Anne's Primary, a little school between St Anne's Hospital and the Holy Trinity Convent. This Catholic school was government aided. The Principal was an Irish nun but the rest of the staff were government paid teachers. The school catered for boys up to Standard one (Grade 3) and girls to Standard five (Grade 7). The school had a small boarding establishment for girls from all over. I had a Dutch friend and a couple of Italians. In the late 1950's several refugee Hungarian girls arrived. Our school hall was the original St Anne's Church, complete with metal vents to mark the spot where Empress Eugene's son (name? cannot remember) lay in state having got himself killed in the Zulu wars.

My High school was Elizabeth High, another beautiful old Hartley red brick building. After matriculating in 1968 I could only obtain a teacher loan so that I could attend university. I did NOT want to teach! I wanted to work in the agricultural field – a vet or entomologist or... But I was a FEMALE and these fields were not open to me, even if we had the money! The Education Department gave me R600 per year for the four years – a three year degree and one year teaching diploma. I majored in Botany and Zoology and then got a diploma in education. Then in 1973, the Education Department posted me to a Boys High school in Northborough (where? and BOYS?? Unheard of for a girl to teach BIOLOGY in a boys' school!!). I did not have to repay the teaching loan in cash. The first three years of teaching wiped out R600 (3 x R200) of the loan, the rest was wiped out in the last year. This way the Department kept you teaching. I tried very hard to save every cent to pay off that loan and get out of teaching as soon as possible but after four years I was hooked.

Northlea Boys' High School (NHBS) was a bit of a culture shock, very different from Hartley, though I got on well with the boys (five brothers is good training!) The pupils told me I talked larny and even some of the teachers thought I was British – of course my English surname tipped the scales. There were only 48 boys in the matric year – many left to enter apprenticeships having completed Standard eight (Grade 10) in the General or the Practical stream.

Of course, NBHS was for White boys only and birth certificates were checked. I do remember some darker complexioned boys but as long as some official had classified you White, then white you were! Even if you were given the nickname - Chocolate! Anyway, NBHS never gave much thought to Black or white (not really relevant in our little world, we were all born under apartheid therefore rarely questioned it, except those politically active varsity students who were always protesting something (bunch of progs!) – most of us simply got on with working to pass as we had loans).

In 1992 the first few Black boys were allowed into NBHS, I remember two in Gr 12 of that year/ or 1993. They were well received and everyone was at pains to not use the K-word when swearing at each other or talking of the Black taxis; and the insult - *don't act like you think you're white*, had to be dropped. I remember looking forward to teaching Black boys who would WANT to work and be grateful for the opportunity! (Ha, ha – they were kids, just like the others)

Indian learners started flooding the school a couple of years later. A parent once told me they wanted WHITE teachers and they were disappointed to see several Indian teachers on the staff. White (then called Model C) schools were considered far superior. True, under apartheid far more money was spent on white education with all its facilities, well the whites paid the taxes didn't they? And the Blacks just kept rioting and burning down their schools anyway!

At first there were not many learners of colour and more Indian than Black boys, so I do not think my teaching/ ideas changed much. Very noticeable was the influx of hard working Indian boys with their determined efforts to achieve an A – anything less and their parents wanted to know why! In the later 1990s we were very understaffed and finally the education department sent us several excess teachers from Indian schools. I was taken aback to discover that it was quite common for most of them to ensure high marks by teaching the test and exam papers! An Indian

colleague assured me that that was the only way to keep the parents happy! After this, how do you explain the poor results that were achieved in the final National School Certificate as a result of this practice?

I remember being more upset by the arrival of girls in the early 2000s (to boost numbers – and increase the Principal’s pay??). I was told they would have a good influence on the boys’ behaviour – well, I am still waiting to see that!

In the last five years the number of Black children has steadily increased due to the school fees at NHS being lower than most comparative high schools. Secondly, the increase has been due to a corporation bus that was organized to bring learners from surrounding suburbs to the NHS doorstep (making it much easier for township learners to access the school). Thirdly, of course the parents wanted that better education for them, township schools are not good enough. To try and control this influx the school demanded proof of residence, giving priority to local kids. Quite a few out of area parents resorted to giving false or addresses of their employers in Northborough. One enterprising lady had several of our pupils as weekly boarders so they could attend.

I also feel great concern for the parents of these children. At great sacrifice to themselves and the rest of their family they are paying high school fees and transport costs in the belief that their child will gain great advantages and be lifted from poverty. They have ambitions of university degrees and well paid jobs, etc, for their child. But many of these children do not seem to appreciate this sacrifice, resisting rather than embrace the opportunities given.

Or are we and the education system as a whole, failing them? Failing to understand where they are coming from, and meeting them at least halfway, before encouraging and inspiring/motivating them to move forward to achieve at least some of their parents’ dreams.

(Part of story given to me by Ms Perkins on Wednesday 19th February 2014)

5.3.1.2 The other side with Mrs Moosa

I am Mrs Rasheedha Moosa. I am a thirty-four year old South African lady of Indian descent. I grew up in the sprawling Indian township of Yeoville. This is one settlement where there is the highest Indian population in diaspora; of course my city has the largest population of Indians outside of India. I’m the youngest in a family of five children, two brothers and two sisters. I have two brothers and two sisters and my siblings are very protective of me - this is to be expected because there is a sixteen year gap between me and my youngest brother to be precise. Yes, I was extremely protected, for example at one point I needed to go to the library for my research, and guess what? The following morning my brother brought home the whole encyclopaedia collection. Then I asked to visit the internet cafe and we were the first to get an internet connection in our area!

I am born of Hindi (an Indian ethnic group) parents and my mother is the pillar of our family. Our parents worked very hard to get us all through school and I’m proud to say we are all educated professionals. Back to my mother, she was such an authoritarian and conservative. Just think of it she wanted her children to have Hindi spouses, her being very critical in matters of religion. Following my mother's advice and chastening, four of my siblings had arranged marriages. The marriages had to be arranged because only she (my mother) could determine the colour (complexion), height, education, beauty of an acceptable future spouse...WHY... because she believe she was the only one in the family who was gifted by Lord Shiva to notice these things - and oh yes she could tell you of all your entire married life simply by looking at your fiancé!

However, when it came to me, I think my mother had lost all her spunk in her old age. She didn't put up too much of a fight when she realised I wanted to marry a Muslim guy who was a colleague at school. Or maybe she knew my Rash (Rashid) shared the same zodiac sign with her (Libra)...yeah... she is into all that stuff or it may have been because he is light-skinned...you know these things can generate a genetic pic (picture) of our kids in my mum's brain. Well bottom-line is she didn't put up too much of resistance. So I'm now married to my HOD (Head of Department - Social Sciences) and we have two boys aged five and three years. So much has changed for me but one thing that she can believe is that I now eat meat after being brought up strictly a vegetarian in our Hindi home.

I attended Silverdale primary school which was an exclusively Indian primary school. It was like that during my primary years, now I remember, I lived in an all Indian bubble. After high school I did my teacher training. I majored in Life Sciences and Physical Sciences. I got a placement in this school in 2006, just after it became a co-ed. I started as a Natural Sciences teacher and have been teaching Life Sciences since 2009.

Having grown up and schooled in an all Indian community and then finding myself teaching in a multi-racial school like Northlea High School was an eye-opener. The first aspect that was really shocking for me was the open behaviour of the White learners. They were so free with their girlfriends/ boyfriends, holding hands etc., when I approached them about this they responded with, well, we live together, OMG!!! And of course their parents knew about this. It took a lot of understanding on my part to realise that, this is the Western Culture! Their parents see them as adults at the age of 15/16 whereas Indians are still children right up till the ripe old age of 40! You know no privacy in the Indian home and if your neighbour sees you holding a guy's hand... well that evening is your last night of peace. Don't get me wrong, in an Indian family there is trust, our parents trust us, but they will still have the entire neighbourhood and the entire family watching you... just in case.

(Part of the story given by Mrs Moosa on Friday 21st of February 2014)

5.3.1.3 An exploration of the life sciences classrooms

Ms Perkins conducted her life sciences classes in a standard laboratory, with fixed long tables and high chairs (bar type). This laboratory was located on the ground floor off the east wing of NHS. This extension has laboratory one (Ms Perkins') on the ground floor and a chemistry laboratory on the first floor and laboratory three on the top floor which served as the physics laboratory. Ms Perkins laboratory did not open up to the quad but onto a covered balcony that led onto the cricket field. The eastern wall of her laboratory (lab) had no windows and behind it were concrete terraces where spectators sat and watched cricket matches. Windows were on the north and south walls. The north windows allowed one to see all the traffic flowing on the covered balcony onto and off the cricket field, whilst the south wall gave unlimited views of the basketball court.

Learners in Ms Perkins lab sat in rows at the five long tables. Each table had the capacity of comfortably seating six learners but I observed that the number of learners at each table varied depending on the position of the table. For example, on my first visit to her class on the 24th of April 2014, the front two rows (T1 & T2) had eight learners each, table three (T3) had

six learners, table four (T4) had five learners and table five (T5) had four learners. On my later visit on the 21st of May T1 and T2 had eight learners, T3 had six learners and T4 and T5 had five learners each.

At the front of the class towards the western wall was the teacher's table. It was a large demonstration table, with a sink in one corner and gas taps at the centre. Behind Ms Perkins table on the western wall was a green metal chalkboard. Next to Ms Perkins on her left was a small fixed book shelf with old thick volumes of biology textbooks. Some of these books had browned pages and some had accumulated chalk dust.

On the interior, walls around the lab were bare except for two A3 posters on the eastern wall showing life cycles of bryophytes. The lab's work surfaces stretched along the southern and eastern walls. The work surface on the southern wall had some, yet to be issued textbooks, and the eastern working surface had a fish tank whose water was green with algae and pond weed. Apparatus and chemical bottles were neatly tucked away in the cupboards under the work surfaces.



Figure 5.22 Inside Ms Perkins' laboratory/ classroom (chairs moved to show the back)

Mrs Moosa's classroom was on the first floor diagonal to the staff lounge. Her classroom door opened into a foyer with a staircase that led into the quad. There were windows on the east and west walls. The windows on the western wall were elevated such that one could not see what was happening in the foyer looking out of the classroom or from the foyer, looking in. The windows on the eastern wall were much lower, however, they had been opaquely painted such that one could not see outside or inside the classroom from the school grounds.

Mrs Moosa's table was located at the front, on the extreme right opposite of the classroom door. A green metal chalkboard was behind her and extended from her table all the way to the door along the southern wall. Over her chair and immediately behind her was a fixed book shelf full of reference textbooks for the different subjects she taught. Next to the fixed shelf stood a lockable metal cupboard in which she kept all documents that needed securing. The northern wall which was directly opposite the chalkboard had a felt-board. Four life sciences charts – one on the digestive system, the other the structure of the eye and eye defects, the third was on food groups and the periodic table of elements were displayed on this wall.



Figure 5.23 Inside Mrs Moosa's classroom

For seating, there were individual desks and chairs for the learners. Seating was arranged in six horizontal rows from the western to the eastern wall and six columns from the south to the north wall. This seating arrangement accommodated thirty-six learners. However, in terms of spatial arrangement of the furniture, the learners brought together the desks such that they ended up with three columns, one with three desks along the eastern wall, the middle column had two and the last column on the western wall had a set of desks that ran along the wall. Hanging from the ceiling were two metal fans.

5.3.1.4 Observations in life sciences classrooms

Between the 24th of April and 11th of June 2014, I visited Ms Perkins' and Mrs Moosa's classrooms and observed them teaching life sciences to grade eleven learners. Each of the

teachers was visited on dates indicated in the methodology section (Table, 4.3). In 2014 there were ninety-one learners doing life sciences at grade eleven at NHS. Ms Perkins' register had thirty-seven learners and Mrs Moosa's had thirty-one, I had the smallest of the classes with twenty-three learners. Observations of the classrooms were made with the aid of a guide that focused on seven aspects described in the data collection methods (Appendix 8). The seven aspects focused were invocations from CRP that served as a standard for observing the pedagogic settings vis-à-vis their responsiveness to cultural diversity. In the following paragraphs I give description of my observations vis-à-vis each of the aspects outlined in the observation guide. Aspects focused on included: descriptions of the physical room arrangements; aesthetics of the setting; evidence of culturally relevant literature; statements of cultural affirmation; instances of culturally relevant practices and strategies; evidence of interaction of the teachers with all cultural groups and lastly unanticipated events with cultural significance.

At NHS learners were expected to line up before they entered the classroom – Why? This was the tradition, so I was told. On my first visit to Ms Perkins lab, 24th April 2014, I noticed that Indian learners with a few Black learners (I later observed that these Black learners were the ones who sat in the front row) had already lined up, while close by were White learners who stood out of line but directly in front of her door. Beyond the Indian line stood Black learners in a group chatting. Ms Perkins came out of her lab and exclaimed to the Black learners “why are you all standing like that, look at these learners waiting for me” (as she pointed to the Indian and White learners). Focusing on a cluster of Black learners she continued to mention that they were disrespectful and arrogant and needed to learn proper manners after which she declared that they were to wait until she had called them in and she proceeded to allow the other learners in and they filled the tables from the front. She proceeded to close the door, but then hesitated to close the door (maybe because I was there since at NHS as a matter of policy learners were not to be kept or kicked out of class for whatever reason) and then brashly called them in and warned them that if that happened again she would not allow them in.

After the learners had entered the lab the following exchange took place: The class began with a roll call, as Ms Perkins called out names the learners responded “yes, ma’am, or present ma’am”. Ms Perkins, called out Lwandle, and one Indian learner said “he is bunking”. One Black learner from table four queried how he knew he was bunking. Ms Perkins addressed the Black learner, “Don’t talk to my learners like that, he was talking to me, if you have anything to say raise your hand. Now stand up and tell us where he is”. To which the Black learner

responded, “No ma’am all I’m asking is how he knew he is bunking?” Decisively, Ms Perkins ordered, “now be quiet if you don’t have anything better to say”. Rumbling in undertones the learner sat down.

With regards to the cultural aesthetics of the classroom settings there was no visible expression of celebrating culture and cultural diversity. It seemed as if the classrooms had been culturally sanitised leaving bare walls and clean working surfaces. However, I noticed a lot of graffiti on the tables, mainly learners’ names and the year in which they had sat in that spot. Absence of significant cultural aesthetics extended to reference materials on the teacher’s book shelves as well as learners’ text resources. The selection of reference textbooks was done by Ms Perkins as the subject head. From a sample of books from different suppliers she chose and Mr Xaba would buy those books for all the learners in any particular grade. In the life sciences classrooms during this study, learners had a standard life sciences textbook and some Indian, White and a few Black learners had another revision study guide that was sold at the school. These reference books seemed intensively factual, even though they had colourful pictures.

On my first visit to Ms Perkins’ (24th April, 2014), she stood at the front as she delivered her lesson. Her lesson on this day was on the breathing process. With a bell-jar, she demonstrated the breathing mechanism. Ms Perkins, using the model described, explained breathing, after which she reverted to lecturing and writing notes on the body. As she demonstrated how breathing occurs using the model, four UBY learners from table five moved over to table four and three and seemed captivated by the demonstration. After the demonstration, as Ms Perkins was reinforcing the concepts, the UBY retreated to their original tables. As the exposition proceeded they took out their cell phones and were busy on them showing each other some things. The teacher took no notice of this and kept on with her exposition till the bell rang for end of class.

Mrs Moosa’s approach was slightly different, she did not talk much but there was intensive writing of notes. On the 24th of April, I partly observed one of her lessons. She was also teaching gaseous exchange before the lesson ended prematurely due to a visit by the blood bank. She did not have the same approach as Ms Perkins and used the question and answer technique. After the learners gave alternative responses to her questions, she revealed her preferred responses on transparencies which she projected and learners took notes as she further explained them. The lesson proceeded this way for approximately fifteen minutes when two prefects came into the class requesting learners who wanted to donate blood to proceed to the

hall. Three White and two Indian learners from the front and second row who had put their names down as volunteers for blood donation picked up their bags and left. After these learners had left, Mrs Moosa suspended the lesson and asked the remaining learners to work independently on anything that they chose to. Most learners closed their books and started chatting and some even took their phones out. A group of five Indian learners approached Mrs Moosa's table and engaged in conversation with her. Black learners formed two large groups at the back and indulged themselves in conversation and exchanged music files on their phones.

On the 9th of May 2014, my observation coincided with Ms Perkins' scheduled practical. Apparatus to investigate the effect of light intensity on the rate of photosynthesis had been laid out in Ms Perkins' laboratory. Ms Perkins announced the groups in which learners were to be working in for this practical. As the learners proceeded to their work stations they began to ask Ms Perkins if they could work with peers other than those they had been assigned to. For progress' sake Ms Perkins had to relent and the grouping occurred along racial lines with the exception of two groups, one with two Indian and one Black learner and the other with one Indian and two Black learners. This observation extended racialised spatial distributions beyond seating arrangements. Ms Perkins introduced the practical session by giving an overview of the practical before the learners started the work and then proceeded to give a detailed worksheet on the methods and asked them to proceed with the practical. As the learners were working in their groups Ms Perkins moved between them, assisting the learners. This came across as contradictory because one of the items on her rubric was an assessment of independence. In the same lesson I observed that Ms Perkins was amazed that Black learners on table four managed to organise and do the practical; she could not stop complimenting them on their progress.

On the 9th of May another unanticipated event occurred and pointed to something I thought was culturally significant. This is what happened as I recorded it in my observation guide:

Assembly finished at eight o'clock. Ms Perkins was in class waiting, she allowed her learners entry, closed the door five minutes after the siren went for lessons to commence. Five learners arrived late, four Black and one Indian. The Indian learner proceeded to open the door, without knocking, handed over a note to Ms Perkins, and was asked to take a seat. The rest of the Black learners respectfully stood outside. After fifteen minutes she went out to address the late learners. "Why are you lot so late?" "Tell me you did not hear the Principal at assembly telling you to return immediately to class?" She allowed them in and they made their way to the back of the class. She handed them the practical worksheets. "Put yourself into a group like the others, work on that and submit the completed work at the end of class" she instructed them. She did not explain the practical as she had done with the entire class prior to the late learners' entry.

A Black learner was caught at the far end of the field with his friends, bunking Ms Perkins class. He informed the prefect that he was afraid to attend class because his work was not up to date. However, as per school policy he was escorted to Lab 1. Ms Perkins was told of the learner's whereabouts, "I will not have him come into my class at this late hour and disrupt a perfectly good practical. I think we can manage without him" She refused to accept him even though he pleaded that he had forgot it was a practical that he was looking forward to. She told him to stand outside for the duration of that lesson (Observations, 9th May, 2014)

The relevance of these incidents is that they revealed the relational aspects of power at work in the life sciences classroom. With nobody aware of what was written on the note handed to Ms Perkins by the Indian learner, there was risk of the incident affirming differentiation for the Black learners in her class.

During my last visit (21st May, 2014) to Ms Perkins classroom, two unanticipated events occurred. After writing the word –Respiration- on the board she asked learners to suggest definitions. Learners at tables one and two were actively brainstorming and started making suggestions which the teachers noted on the board. Black learners at the last two tables were restless and seemed not focused on what was happening. They intermittently conversed and the teacher had to constantly call on them to be part of the class proceedings. At one point Ms Perkins shouted “This work is important, it will be there in your test and exam and if you don’t get it now you will fail”. However, this seemed to have minimal effect as they would focus for a moment and were disengaged thereafter. Whilst this was going on, an UBY sitting at the back of the class took out his cell phone and began typing something. Ms Perkins ordered the learner to surrender the phone to which the learner refused vehemently, “It’s my phone ma’am, I can switch it off, but I cannot give it to you.” Ms Perkins gave him an ultimatum, “Either you surrender the phone or you are out of my class!” The UBY put his open notebook back into his bag, quietly rose and walked out of the room. After which Ms Perkins continued with her teaching seemingly distressed and giving no attention to what was happening at the back tables.

My second observation in Mrs Moosa’s classroom took place on the 29th of May 2014. On this day I was the first one, usually I would wait at the back of the line and come in after all the learners had filed in. The class took almost five minutes to settle down. On the commencement of the lesson Mrs Moosa moved some Black boys from the back two rows and swapped them with some Black learners from rows two and three and then began taking the register. As she started teaching she asked all learners to take out their textbooks. Of the learners she had moved upfront four did not have their textbooks and she instructed them to leave class to borrow the textbooks. At the same moment a White learner was busy going through his bag and Mrs Moosa inquired what the problem was with him and he informed her

that he seemed to be missing his book. Mrs Moosa instructed him to sit next to a learner in front of him and share and she proceeded to teach and when the Black learners came back she had already gone through the introductory part of the lesson.

During this lesson there was a strong smell of dagga/marijuana in the class. A Black girl from table three alerted Mrs Moosa to this. She stopped teaching as the learners were distracted and no longer paying attention. Mrs Moosa walked along the left of the classroom to the back row to a Black learner who seemed fast asleep with his head on the desk. She asked him to wake up but he kept his head down. Eventually he raised his head but his eyes were blood-shot. “Did you smoke dagga?” she asked the learner to which he responded, “no”. To which she responded, “Then why are your eyes so red?” She insisted he had smoked dagga, and a mini-quarrel ensued. The White male teacher from next door was called in and without any interrogation suggested that the learner was high on drugs. The learner was sent to Mr Ogden for a drug test. I later learnt that the results were negative and Mr Ogden later informed Mrs Moosa that the learner had an after school job at a local mall therefore suffered from sleep deprivation. It was later established that the smell was coming from behind Mrs Moosa’s classroom block where the maintenance staff quarter was located.

My last lesson observation in Mrs Moosa’s classroom took place on the 11th of June, 2014. I made three significant observations on this visit. Firstly, out of the thirty-six that were supposed to be present in her class, six were absent and they were all UBY. Secondly, Mrs Moosa had a tendency of standing by the door as learners came in and did uniform inspection. On this day she had the following exchange with one of her Black female learners, “Why have you not removed your braids? Didn't I tell you last week and we agreed that over the weekend they will be out.” Learner responded, “My mom says she will do it this weekend because she was working and didn't have time.” “That's a poor excuse, you girls just don't listen,” said Mrs Moosa. I noticed that she said nothing to the Indian girls who had their hair highlighted. The last significant, unanticipated event occurred during the lesson. The lesson had been flowing and learners seemed engaged during the question and answer session, however, Sbu who was seated in the fourth row was not paying attention and Mrs Moosa asked him a question; “So tell me Sbu, what is the difference between respiration and perspiration?” Sbu was clueless. Two things intrigued me from this observation, firstly it seemed the question was out of context and seemed aimed at embarrassing Sbu. During this exchange one Black learner sitting next to Sbu mumbled something in isiZulu directed at Sbu and his two colleagues from row five and six laughed. Mrs Moosa was agitated by this and ordered them to go and stand at the back until

they had told her what it was they were laughing at. They all obliged but ranted as they went to the back for being punished for *mahala* (for nothing, in isiZulu). As they stood at the back which is where I was seated, I later learnt that what the learner had said was “there you go wise guy, caught flat-footed”. During this same incident, whilst Mrs Moosa was dealing with Sbu and his peers and sending them to the back, one Black learner in concurrence with the Indian learners from the front row suggested that she kick them out, as he alleged they were not here to learn and needed to be kicked out so she could save her energy. However, Mrs Moosa did not address these learners’ utterances.

During observations it was concerning that no culturally relevant pedagogical practices were observed. Hints of acknowledgement of diversity were observed twice during the observation sessions. In Ms Perkins first observed lesson (24th April), an incident in which diversity was acknowledged was when she asked the isiZulu name for lungs. The chorused response from the majority of Black learners was *Amaphaphu*. From the chorused response it was clear that the majority of the learners were perhaps isiZulu speakers. However, my attention turned to the other Black learners who had not responded. It later emerged during co-generative dialoguing with UBY that these learners in Ms Perkins’ class were Swati and Sotho speakers. Perhaps an alternative culturally nuanced question would have been, what are other names for lungs? A similar event occurred in Mrs Moosa’s class. On the 29th of May she was teaching kidney diseases and at some point she asked, “Can one African learner tell us how the Zulu culture explains kidney stones as opposed to the medical explanation are?” (Mrs Moosa, 29 May, 2014). Implicit in the statements made by both teachers was the notion that all Black learners were isiZulu and as such held similar systems of meanings. Despite the majority being isiZulu speakers, there was a possibility that their culture may be any one of the many Black African cultures.

In the presentation of artefacts above I tried to represent what was given to me by my colleagues as well as what I observed and experienced in the life sciences classrooms (micro-level) at NHS. From the observed artefacts in life sciences classrooms at NHS several things came to the fore. In the ensuing discussion, according to Schein’s analytical framework I do not make interpretations, neither do I draw inferences but I highlight the key observable objects and process of the life sciences classrooms at NHS.

From the teachers’ narratives it emerged that they had grown up in mono-cultural environments. Their socialisation was within such a context and their initial contact with

culturally diverse learning context was at NHS. The life sciences teachers were descendants from generations of a people who had lived in spatial and cultural isolation. What was crucial in unravelling this artefact was that it pointed to the trans-generational transcendence of mono-culturally socialised individuals as teachers in mCs. Ms Perkins at the time of this study was nearing retirement (which she did at the end of 2015), whereas Mrs Moosa was just beginning her career, in terms of age she still had more than twenty years to serve. The significance of this finding was it indicated the possibility of learners in mCs (including UBY) to be taught by teachers who have been socialised in mono-cultural contexts for the foreseeable future.

Another unique artefact from the teachers' narratives was that their encounters with Black learners was a culturally unsettling experience. Ms Perkins wrote of her apprehension as the school opened up its doors for Black learners and Mrs Moosa also acknowledged this aspect as she wrote, "then, there were the Black learners". What emerged also in this artefact, particularly for Ms Perkins was that initially there was positive expectation which then fizzled out as she started engaging with the Black learners. From her narrative, perhaps Ms Perkins' frustration and disappointment with Black learners arose from their failure to work as hard as she had anticipated they would.

Another unique artefact was the culturally-nuanced seating arrangement. Even though similar seating patterns have been noted by researchers like Vandeyar and Killen (2006), in their study the patterns were determined by the teachers. In the life sciences classrooms at NHS, learners organised themselves, interestingly producing similar patterns. Due to the above researchers' study being in primary school, perhaps learners had internalised such seating patterns and were enacting on conditioning. However, in this study the racial mix in other rows and tables disqualified the notion of race as a segregative factor, as found in other studies (Chisholm, 2005; Jansen, 2004; Vandeyar and Killen, 2006). Another finding that emerged from this artefact which other scholars have not commented on is the connection between spatial distribution and participation, as well as the conspicuous difference between Black learners in the same pedagogic setting in terms of participation.

Whilst other scholars have inferred differential treatment of learners in diverse pedagogic contexts (Carrim, 1998; Jansen, 2004; Moletsane, 1999; Pillay, 2004), the context in all these studies was one where Black learners were numerically fewer, which made findings in this study peculiar. What was emerging from these artefacts seemed more overt and complex. Through capturing the artefacts this study managed to capture overt differentiation, inequitable

treatment of Black learners and intra-racial differentiation. The overt and inequitable nature of these artefacts was exemplified with incidents in Mrs Moosa's class in which learners had to go and fetch learning materials; the treatment of late comers by Ms Perkins (perhaps the Indian learner had a valid excuse), and later admitting the Black learners into class and asking them to proceed with the task without any guidance; Ms Perkins focusing on teaching the front row learners, whilst those at the back continued enacting in ways that limited their learning opportunities; Mrs Moosa picking on the Black learner when there was a smell of dagga in her classroom; her questioning the Black girl with regards to her hair and letting the Indian girls with highlighted hair pass through and lastly, Mrs Moosa stopping the lesson when a handful of learners had gone for the blood donation. I am of the view that the learners who left were so few that it may not have warranted Mrs Moosa to adjourn the lesson. This artefact suggested that perhaps the learners that left were from the front rows (those considered to be more intelligent or participated more) the teacher perhaps thought it not worthwhile to continue teaching. However, this aspect pointed to the differential valuing of learners. The striking thing with the last observation was that on my last visit to her class, six Black learners were absent, but the lesson continued.

The complexity of these artefacts was that differentiation was not just inter-racial, that is Black from learners of other race groups but the finding that life sciences teachers also differentiated between Black learners that is, in their enactments, they overtly distinguished front row Black learners and back row Black learners. The relevance of these artefacts was that they sustained Foucault's precept of differentiation and explicitly demonstrated the continuation of desegregation (a modified version) in supposedly integrated contexts. The complexity of artefactual differentiation as captured in life sciences classrooms at NHS was that it was occurring against a backdrop of Black learners being numerically advantaged over other race groups. This aspect foregrounded the need to explore the source of differentiation. In the previous studies differentiation was attributed to variations in population numbers skewed against Black learners. Thus, the persistence of differentiation in a context where population numbers were for Black learners foregrounded the need to go beyond artefacts.

The other unique artefactual finding from this study pertained to the relational aspects of the life sciences classrooms. Research on desegregated classrooms in South Africa has portrayed them as peaceable, with teachers having free reign on all aspects of the classroom and Black learners being docile from feelings of alienation (Meier & Hartell, 2009). However, artefacts in this study presented highly conflicted pedagogic settings. Black learners were not

enacting like docile victims broken by the teachers' authority. In this I observed teachers losing their tempers and struggling to reign in UBY. The artefacts showed that the life sciences classrooms were far from peaceable with all learners being subservient to the teachers. The way learners prevailed over Ms Perkins with regards to grouping pointed to this.

In terms of pedagogy, artefacts painted a picture of curriculum revolving around the teacher. The bare walls, standard textbooks and observed transmission pedagogical methods devolved all attention on the life sciences teachers. The two life sciences teachers through their pedagogical enactments made themselves the centre and sole determinants of all that happened in the life sciences classrooms. Implicit within their pedagogical enactments was a single-mindedness informed by the notion that they had a job to do. Standard textbooks compounded this approach because they seemed to put everything and everyone on equal footing. I believe it is for this reason that standard textbooks have been indicted as incompatible with responsive context sensitive curriculum (Malcolm & Alant, 2004). Pedagogical artefacts also revealed another aspect about the teachers, their desire to demonstrate their expertise in how they taught life sciences. In his study Jansen (2004) observed similar teacher enactments of the need for teachers in established and privileged schools to exercise autonomy over how they teach. The observable impact of these pedagogical approaches was their failure to capture and sustain the attention and interest of UBY.

Closely related to the pedagogical artefacts was the finding that the life sciences teachers regarded all Black learners as the same. In her narrative Mrs Moosa alluded to this artefact, when she posited that one challenge was that Black learners looked the same and in her classroom enactments Ms Perkins operationalised this artefact as she asked naming for lungs to be in isiZulu. Perhaps her question was based on the fact that isiZulu is the language spoken by the majority of Black people in the province in which NHS was located. However, the problem with this artefact was that it had exclusionary potential for Black learners for whom isiZulu was not their language. It became my view from these artefacts that such oversights on the part of my colleagues, could be interpreted as essentialistic and alienating by those Black learners whose culture had not been acknowledged. This finding pointed to teacher enactments in life sciences bordering on denial of difference, stereotyping or culture-blindness.

The artefacts above captured what was going on in the context in which UBYC was developing. However, it was not adequate to draw inferences from such without establishing the value-system of the context. From the life sciences teachers' artefacts, my observations and

the semi-structured interviews held with them, I managed to identify some of their espoused values. In the next section I present the life sciences teachers' espoused values.

5.3.2 Espoused Values

Consideration of the various artefacts identified in the life sciences classes taught by Ms Perkins and Mrs Moosa brought to the surface things that they greatly valued. Some values elicited resonated with the values I had observed for NHS as a whole, however some values observed seemed unique to this context.

5.3.2.1 Espoused values about social identity

From the profiles of the two teachers it was quite apparent how much euro centrism was valued in particular, the English way of doing things. Despite Mrs Moosa having grown up in an "all Indian bubble", having been born, grown up in an Indian suburb and schooled in Indian schools, she professed how English she was expected to be. This value was best captured by Mrs Moosa when she said:

Even though the environment was Indian, I know that our approach to things was English, and we were so encouraged to be the best that we can be for our families as well as the rest of the Indian populace. I think we were supposed to be successful Indians with a White identity as that would guarantee our success (Narrative, 21st February, 2014).

For Ms Perkins this value was observed in her writing and in the interviews when she seemed so nostalgic of her English upbringing and was almost tearing when she related the good old days at the Cedars (autobiography, 19 February, 2014). She further espoused this value (Interview, 17 April, 2014) when she tried to describe what she expected of learners in the life sciences classroom.

If from grade 1 they have been in a model B, what do I call it White school, okay, with predominantly White and Indian teachers I'm talking of Black children now, then it's in their psych already, there is no problem at all, you don't have to distinguish at all, between one another, they are well aware of what needs to be done, their English is as good as mine. They write perfectly, then you can have a Black kid coming tops (Ms Perkins, Interview, 17th April, 2014)

This value was persistent among the life sciences teachers at NHS that they acknowledged its usage in differentiating Black learners, into the ones I referred to as UBY and the others just as Black learners. According to Ms Perkins for the Black learners it was not so much the religious differences as among the Indians but rather:

Which school they went to, for junior school, in other words how much English they have been taught in and that I see a big difference between, say a child coming straight from a township school an all-Black school and suddenly here... coming into a lab for the first time. Absolutely

you do notice, or I noticed... I don't think they have a problem if they have a background, our culture, and our interests, yes...are in line with what we expect in the class (Ms Perkins, Interview, 17th April, 2014).

As alluded to earlier, for me UBY became those Black learners who sat in the last rows in Mrs Moosa's and at the last two tables in Ms Perkins' classrooms. They were the ones that came late for class, bunked classes and did not participate actively in the lessons. The Black learners were those that sat at the front and conformed and complied and were euro-centric enough for the life sciences teachers. In valuing Black learners who had embraced their euro-centric culture, life sciences teachers at NHS confirmed default valued assimilationism. This espoused value unsurprisingly is connected to the next espoused value by the teachers, that of, conformity and control.

5.3.2.2 Espoused values about social interaction

Another espoused value that strongly came across in the life sciences classrooms at NHS was the primacy of ability to control and enforce compliance. Thus, life sciences teachers' espoused value seemed to emanate from their upbringing as well as from the macro-context, that is, NHS. The school (NHS) was founded to meet the educational needs of the English community. As I highlight this historical aspect, I do not intend to insinuate that NHS at the time of this study was an English school, but rather that its history predisposed it to euro-centric traditions. Such traditions were valued at both school and life sciences classroom level by the teachers. Reading the statement of events, class observation and capturing their sentiment from interviews, it seemed the ability to control and enforce compliance with the school's traditions were primary in all that the teachers were doing in the life sciences classroom. In all statements where they registered their challenges it seemed that these challenges emanated from their inability to control and enforce compliance. The teachers greatly valued being in control and in-charge of all that went on and whoever was in their classrooms. They jealously guarded their influence and did not take lightly to any sign of their authority and power being usurped. I took it that their operational mantra was, comply and complain later. According to Mrs Moosa, all that learners needed to do was: "Come to school, pay attention, do what is required" (Interview, 25 April, 2014). Further exposing the centrality of control, teaching life sciences was equated to be a battle which was being complicated by the diversity of their classes. Responding to why it was a battle, Mrs Moosa explained:

You try to talk to them about it (importance of work), try to explain to them and try to get their friends who understand to talk to them about it and explain to them...it's a battle that you have to go through everyday...it's like you are policing them around every day, all the time. And they

are irritated because you are policing them and you are getting irritated because you are not getting what you need from them (Mrs Moosa, Interview, 25th April, 2014).

It seemed there were boundaries that life sciences teachers greatly valued which learners were not supposed to cross and which the teachers were prepared to defend. An incident report from Mrs Moosa's class brings out this aspect of the espoused value:

As I tried to get him to at least sit and hopefully do his test, he could see that he was clearly testing my patience ...I was not going to back off because in my mind, this learner has pushed the boundaries; he was showing complete disrespect and challenging an educator. So I accepted his challenge with a, fine, come on, to which he slapped me (Incident report, 27 March, 2014; 8.45am)

As we discussed how culture was impacting her life sciences classes Ms Perkins had no reservations in registering her frustrations with UBY in her class. These frustrations brought out the persistence of the value of the ability to control and enforce compliance:

It's stressful. I worry all the time...I feel they are not going to make it. I don't know what it is, but sometimes I think it's a total lack of discipline...I just thank God that Big Sho (a UBY) does not turn up for class, it's a shocking thing to say but he will not allow the lesson to go on. I truly think I'm failing that class. Really, I'm getting frustrated, I don't know which way to go. I know what has got to be done, but I can't get them to come along for the ride (Interview, 25 April, 2014).

The last statement made by Ms Perkins summed up the teacher-UBY dynamic in life sciences at NHS. The teachers felt they were endowed with all they needed to deliver the curriculum, however, for them what was missing was learner conformity and their ability to enforce it. The teachers found the inability to control and enforce, frustrating. As experienced professionals, the expectation at NHS was that they were to be in control and subjugate their environment, all of which they were failing to do. UBY, thus seemed to be a threat to their power, which they valued.

5.3.2.3 Espoused values about academics and outcomes

Like at the macro-level (NHS), another espoused value was that of academics and good results in the life sciences classroom. Academic achievement was an aspect that seemed to bother and around which the two life sciences teachers became a tag team. As I conversed with the teachers it emerged that it was not just the overt enactments by UBY which were a frustration, but rather the fact that whilst they acted as they did, they also failed to succeed academically. Due to academic excellence being valued at NHS, all effort in the life sciences classroom was on passing the examination and getting the best results. Ms Perkins (Interview, 21 May, 2014) affirmed this value:

My consideration is they all have a common examination paper that they are all going to answer more or less this way. And wherever you are coming from this is what I want you to say, this is what I want you to write, this is what they are going to ask, so please, this is how to answer it. That's what will be expected. We work with the goal rather than the means or where you are coming from. What we are aiming for is you going in and passing that paper. This is the best way to do, that's what they expect wherever you are coming from (Ms Perkins, 21st May, 2014).

Results as an indicator of academic success were so valued in the life sciences classroom, even more than culture. There was consensus that culture did not really matter because, “the Senior Certificate is not going to consider their culture...they still gotta get to that goal, however they get there” (Interview, Ms Perkins, 21 May, 2014).

Affirming this value, Mrs Moosa in our interview explained, “I think that sometimes you have to teach concepts and you have to teach this in the way it's going to be (examined). I think it boils down to examinable things... it's gonna be that way” (Interview, 16 April, 2014). She felt so strongly about this value that she vented her frustration at parents whom she believed were not supportive enough. “I'm sacrificing my time to be here and I expect the parent to be here...they don't necessarily have to wait for one day – parents' meeting” (Interview, 16 April, 2014).

5.3.2.4 Espoused values about teaching

Closely tied to emphasis on passing was the value placed on the transmission model of teaching. Lesson observation and teacher interviews revealed the centrality of this approach in teacher pedagogical practice in life sciences at NHS. Similar observations were observed with Mrs Moosa even though she tended to question more broadly, but she tended to do most of the talking and the learners had to listen and take notes. Learner notes ranged from directly copying from their study guides to completing their worksheets using their study guides. Teachers talking and learners writing was observed as the most prevalent pedagogical approach and regarded by the teachers as the most effective way for teaching life sciences. Responding to my question on how they have been teaching and how their teaching has changed since their classrooms became culturally diverse, the two teachers had this to say:

I feel in certain sections you gonna have to teach. You have to stand in there and tell them, this is how it goes... you have to really explain to the learners. You have to actually find out where, what the learner actually needs to know... find out how you going to help and move on with the lesson...you move on with your syllabus. (Interview, Mrs Moosa, 16 April, 2014)

Ms Perkins was more direct and not apologetic about how instruction needed to proceed for maximum understanding and to get the results.

If I'm talking to them I want them to be looking at me or at the book, in other words, they are focused, you know what I mean. It worries me if they are not focused. Then I will reprimand them and say, excuse me I'm here, attention! ... You have to tell them, I desperately know what you need to know, you need to sit quietly, you need to be listening to me, you need to be that far in the syllabus, and this is what we need to cover. (Interview, 17 April, 2014).

Justification for holding such a value was given by Ms Perkins (Interview, 17th April, 2014) who said that “sometimes you have to push well ahead otherwise you will never make it, cut out the extras, don't worry about interesting them, just get through the syllabus, cover the bare essentials otherwise they will never make it”.

The listing of espoused values presented above is not exhaustive, but includes those values I felt had utility in the unravelling of the context in which UBYC had developed. In the preceding section I presented artefacts, which within Schein's analytical framework are tangible cultural manifestation and yet inadequate in rendering cultural insight. The inadequacy of artefacts in providing insight lies in their meaning being subject to how interpretation proceeds. In this section I have presented espoused values, what Schein (2004) captures as the organisation's sense of what to be as opposed to what is. The cultural significance of espoused values lies in their instrumentality in group challenge resolution and them being foundational in the development of basic assumptions, if they work long enough (Schein, 2004).

An analysis of the grade eleven life sciences teachers' values resulted in four categories:- values about the self, values about social organisation, values about professional responsibility and lastly, values about pedagogical practices. Within Schein's analytical framework the life sciences teachers had a sense of who they thought they were, how classrooms ought to be structured, what educational priorities were and what teaching and learning was all about. By espousing all these values life sciences teachers were solving as argued by Schein (2004) critical challenges they were facing in both their personal and professional lives.

I considered the espoused value for euro-centrism as a value about the self. From the teachers' narratives the origins of this value can be traced. Ms Perkins related the advantages of her euro-centric identity in her privileged schooling and financial support that saw her through university. Mrs Moosa mentioned the valuing of being euro-centric in her Indian bubble. In light of Schein's analytical frame, it is important to establish the challenge that euro-centrism resolved for those who valued it. From the teachers' narratives this value was associated with privileges that served as a conduit for material benefit. For Ms Perkins being identified as a European spared her the disadvantage of apartheid and for Mrs Moosa being

identified as English or being euro-centric enough guaranteed success in life and freed her from the limitations of being of non-European descent. Thus, the value of euro-centrism provided the sense of connectedness and requisite cultural identity needed by both to benefit from a system that was skewed against those of non-European descent in South Africa during apartheid. But why was the value continuing after the demise of apartheid?

The answer to the question in the preceding paragraph can be obtained from considering assimilation as a practice in accommodating diversity. Both teachers in this study expressed how much they wished Black learners could change and assume a euro-centric identity. In describing their success with some Black learners the standard was how euro-centric they had become. The practice of assimilationism in accommodating diversity is well documented in South Africa (Meier, 2005). What has been missing is a possible explanation of the impetus to assimilate. The findings from this study indicated two sources of motivation to assimilate. Firstly, from the teachers' narratives an empathetic motivation was inferred. Cognisant of the potency of euro-centrism in unlocking doors and rendering material benefit to them, the life sciences teachers tried to assimilate UBY, so they could also succeed like they did. In this regard the teachers' *self* sought to reproduce itself. Inherent in this motivation to assimilate was the belief that if Black learners were to change and be euro-centric enough, they would succeed in life. The second source of the impetus to assimilate that sustained the value for euro-centrism seemed to be professional pragmatism. Coming from a conflicted history, it seemed the life sciences teachers attributed their challenges in the life sciences classroom to difference. Having being raised in mono-cultural context there was a possibility that they harboured the notion that they had succeeded in their lives by being similar. From such a notion, perhaps the teachers held the view that if all their learners were the same and similar to them then classroom challenges could be eliminated. What was problematic with such notions was that they underplayed intra- and inter-group differences which are an ever-present reality. Thus, the promotion and valuing of euro-centrism seemed to be based on the supposed currency it had for improving the pedagogic setting, through obliteration of difference. The significance of both teachers' espousing this value was that it seemed to have the potential to resolve their professional challenge of guaranteeing success and connecting with all their learners on familiar territory. On the former aspect this value was attendant to the teachers' need for competency and on the latter the need for connectedness (Ryan & Deci, 2000).

The valuing of the teacher's ability to control and enforce compliance fell into the category of values about social structure. From Schein's postulation, it was the teachers' belief

that the life sciences classroom had to be under the teacher with his / her word carried the day. Learners, on the other hand, within this value had to be subservient to the teacher's authority and theirs was to comply. I managed to glean two reasons why teachers at NHS espoused this value. Firstly, this the social structure they believed in by virtue of their socialisation. For both teachers, power and authority had been uni-directional and was operationalised by teachers. Ms Moosa related her conservative upbringing with authority figures commanding respect and "watching those below" (Narrative 21st February, 2014). Ms Perkins spoke of the good old days when learners did not have to be fetched for detention, but would come willingly. Years later, in 2014, the teachers still conceptualised the school structure as they had been socialised and had experienced when NHS was still mono-cultural. From their socialisation they envisaged the social structure emanating from complying and complaining later as a viable alternative. Now that they were leaders in their classroom they regarded this value as a safeguard of their power and autonomy (Ryan & Deci, 2000). Secondly, it seemed this value was espoused in attempts to mitigate failure through deliberate rallying and regimenting learners towards success. The teachers valued control because they thought they could force the learners to learn and hence force them to succeed. It was in this regard that Ms Perkins and Mrs Moosa longed for disciplined docile bodies of learners who would just sit and listen. Thus, the expediency of this value lay in sheltering the teachers' power and enhancing their sense of competence through forced learner success through rigorous drilling.

Valuing academics and results fell into the category of professional values. At NHS all teachers were regarded as experts. Their expertise was evaluated against the academic success of their learners in public examinations. Thus, the teacher's professional competency was intertwined with examination performance. From the conceptual framework of intrinsic motivation it follows that learner examination results at NHS conduced or facilitated a sense of competence for the teachers. From this conceptual linkage it became clear why life sciences teachers valued academics and results. It was from academics that they derived affirmation of their competency. Another significant finding was that this value tended to influence teacher focus in the life sciences classrooms. From this finding, I then understood why the teachers were more connected to the front row learners. The front row learners were the ones who were going to deliver the results and were therefore conductors of the teachers' sense of competence. The teachers' focus was thus on these learners, primarily because they were more likely to succeed and guaranteed the teachers affirmation of their competence. From this dimension, this value also explained why Mrs Moosa did not find it worthwhile to teach the remaining majority

after a few learners had left her classroom. Thus, the persistence of this value in life sciences was largely due to the solution to the psycho-emotional dissonance that came with failure which was synonymous with a low pass rate. In terms of Schein's framework, this value was a means for trauma aversion and a mechanism for positive reinforcement. I hasten to point out that emphasising on passing and achieving results was not a negative thing, but perhaps was disconcerting. However, within CRP, Ms Perkins' and Mrs Moosa's statements emphasising the goal and not giving due regard to the means was perhaps the Achilles heel of their academic efforts in the life sciences classrooms. Academic success needed to occur within a context of fluid-social relationships, high expectations and sensitivity to diversity (Villegas & Lucas, 2002). The value of control and compliance and that of academics led to the last value that I adjudged to have utility in understanding the context in which UBYC was developing, that of transmission pedagogy.

The espoused value in terms of pedagogic practice was transmission. Teachers at NHS believed that teaching had to revolve and be determined by the teacher. Such pedagogical practices have been found to dominate urban science classrooms (Gallagher, 2000). As intimated by the life sciences teachers at NHS, teaching in this context was preoccupied with regimenting learners towards the mastery of specific target questions. Through transmission, the teachers focused on immediate concepts and questions. Whilst studying diversity in South Africa, Alexander (2009) also noted that the persistence of this talk-chalk approach in teaching occurred against a backdrop of teachers holding positive views of contemporary, learner-centred approaches to teaching. Hemson (2006) attributes this misalignment between ideological confession and practices to teacher socialisation in contexts that were not as diverse as the arena they now practised. However, this study found that this misalignment was sustained by other deeply held values, which then informed the structuring of pedagogical practice. It seemed the valuing of control and absolute compliance captured at NHS did not promote communal open democratic practices in the life sciences classrooms, because such practices usurped the teacher's power and elevated his / her anxiety. Marais and Meier (2010) found that the abolition of corporal punishment in South African schools has left an ever increasing numbers of teachers distressed with learner enactments. Faced with limited means for maintaining classroom order teachers at NHS seemed to have resolved this challenge by enacting their pedagogy through transmission, which centralised all the classroom discourse on them. Such an approach eliminated the emergence of disruptive hotspots in the classroom as the only enacting agent was the teacher. It seemed that my colleagues at NHS had no problem

with chalk-talk because it had utility in establishing and maintaining order in their classrooms. Viewed this way, the transmission model ceased to be a pedagogical liability for the teachers. Within Schein's framework it was a working solution to the teachers' perceived challenge of maintaining order in the context of diversity. Not only did this value allow the prevalence of order in the classroom, it also allowed the teachers to drill concepts into learners, an approach which resonated with the value of academics and results. Related to the latter value, the valuing of the transmission model allowed the life sciences teachers to pursue academic success, hence affirmation of their competence through eliminating communalism in classrooms.

In the discussion above I attempted to present cultural insights that emerged from the espoused values and tried to explain some observed artefacts in the grade eleven life sciences classrooms at NHS. In the next section I present the basic tacit assumptions, deciphered from the artefacts and espoused values. These deciphered assumptions came across as governing how the life sciences teachers conducted themselves in life sciences classrooms at NHS. Through governing teacher enactments, these assumptions therefore informed life sciences teachers' structuring of the life sciences classrooms', hence the context in which UBYC was developing.

5.3.3 Basic Assumptions of the life sciences teachers - the anatomy of the context

Within Schein's analytical framework, basic tacit assumptions are deeply held and jealously guarded rationalisations for enacting. Such basic assumptions are premised on espoused values whose utility has been prolonged that they fall out of consciousness into the domain of the taken-for-granted. In this domain basic assumptions guide agentic enactments and inform perceptions. As I present the basic tacit assumptions of life sciences teachers, from the analytical framework (organisations and organisational culture), by default I am presenting sedimented taken-for-granted espoused values that have been workable solutions to the challenges that the life sciences teachers have confronted both in and out of life sciences classrooms. Through these assumptions life sciences teachers had overcome the challenge of external adaptation and internal integration (Schein, 2004). With regards to this study, these basic assumptions were the tacit web of meanings, hence the culture of the micro-context, which was the life sciences classroom. In terms of the first research question, these assumptions were the context in which UBYC was developing. When culture has been conceptualised as shared tacit assumptions as groups grapple with external adaptation (Schein, 2004), the life sciences teachers' basic assumptions in the context of this study constituted the external

problem that Black learners had to collectively deal with. Within Schein's framework, as the Black learners contended with the classroom structures influenced by these teachers' assumptions, UBYC was birthed. Thus, as I present the tacit assumptions, it is an autopsy of the external tacit reality that Black learners were expected to adapt to through positive learning.

From the artefacts and espoused values highlighted in the preceding sections I tried to decipher the life sciences teachers' unspoken basic assumptions. In deciphering the basic assumptions of grade eleven life sciences teachers at NHS I used a conflated approach in which I contextualised my interpretively deciphered assumptions within a culturally relevant pedagogy (CRP) framework, whilst using Schein's model for analysis. In adopting such an approach, it became my view that it was the teachers' assumptions in the context of principles of CRP that had pedagogical significance. As I presented my analytical and conceptual frameworks it was my view that CRP as a pre-established set of assumptions had the capacity to serve as standard against which life sciences teachers' practices could be analysed vis-à-vis their pedagogic adequacy for all learners. It was with this understanding that the deciphering of life sciences teachers' assumptions was guided by such a conflated framework through which I was able to superimpose Villegas and Lucas (2002) CRP dispositions with assumptions that emerged from the data as informing the grade eleven life sciences teachers' practices at NHS. In the following sections I present the life sciences assumptions. In the spirit of this multi-faceted approach I begin by presenting the CRP tenet/s related to an assumption before I present the deciphered assumption that served to explain the artefacts and espoused values. Below are the life sciences teachers' assumptions deciphered at NHS.

5.3.3.1 Assumptions about social identity

Within the CRP framework life sciences teachers are expected to be socio-culturally conscious. Being socio-culturally conscious entails being at the forefront of pushing back the frontiers of discrimination, stereotype and injustice. Such teachers accomplish this consciousness through reconstructions of their identities emanating from reflexive introspection. However, from interpreting what I had observed in the life sciences classroom, I deciphered that espoused values of euro-centrism had transformed into an assumptions of a superior social identity, an antithesis of CRP. But on what basis was this assumption premised?

From their life stories both Ms Perkins and Mrs Moosa described how they had grown up and had been nurtured in mono-cultural environments. From the artefacts I noted that having grown up at the Cedars Ms Perkins, went to an English school and whilst there, was exposed

to Christian education, the interpretation of which she confessed was influenced by the Afrikaner doctrines of apartheid. She claimed that it was during this time that she began to notice difference. In her narrative she professed that it was during this time that she:

Became aware that there were kids that were different; many spoke with an accent a bit different from us. They were a bit different from us...I don't know if little children see colour but I was so aware that Olga was a Dutch girl and her thinking was a little different (Ms Perkins narrative, 19th February, 2014)

Relating her life at the Cedars farm she recalled her initial contact and experience with Black people which seemed to have largely influenced her constructs of Black people hence her assumption about social identity. Ms Perkins spoke of the Zulu compound in which:

The African (Black) staff seemed to be fairly permanent and lived in a compound of 'little houses' on the western boundary...There were about six men and their families mostly Zulus, but Gorlie the Induna (the chief) was born in Rhodesia (colonial name for Zimbabwe). Old Gracie came from Matatiele and lived in the top house with my gran, as her maid and Patrick the chauffer lived close to the top house. At Rose cottage I can remember between one and three Zulu maids at times – a house maid, laundry maid and a young girl to supervise the younger children (Ms Perkins narrative, 19th February, 2014).

Such formative experiences seemed to have had an influence on Ms Perkins social identity and her perceptions of Black people who, from her experiences were constructed as deficient and subservient. She embraced this identity though she contended in her biography that she “never thought much of Black and White – not really relevant in our little world we were all born under apartheid and rarely questioned it”. Those who questioned it she described as a bunch of “progs” (autobiography, 19th February, 2014). In line with the assumption of a superior social identity Ms Perkins in her biography acknowledged the inequitable financing of Black schools but defended and justified it as she remarked; “true under apartheid far more money was spent on white education with all its facilities. Well the Whites paid the taxes didn't they? ...the Blacks just kept rioting and burning down schools” (Autobiography, 19 February, 2014). Such sentiments indicated not only the acknowledgement of her social identity but its justification and indicated how taken for granted her superior social identity had become. From a CRP perspective the expectation was that in 2014, twenty years after apartheid Ms Perkins would have done some introspection and reconceptualised the past and understood her position in the present. However, her statements during interviews indicated that she had not as yet questioned her attitudes and worldviews about the unjust past and as such lacked the social consciousness. During interviewing Ms Perkins confirmed my analysis as she used terms like *our*, *we* and *us* in reference to instances where she expressed how the coming in of Black learners had degraded NHS (Ms Perkins, Interview, 17th April, 2014).

Not only were these conversations nostalgic for Ms Perkins but they suggested and showed how far her social identity and associated privilege had further been validated at NHS where she had been received as a British *larny* (Indian colloquial for upper class) with her English surname tipping the scales of privilege in her favour (Autobiography, 19th February, 2014). The persistence of the assumption of a superior social identity was also confirmed when Ms Perkins registered satisfaction with her impact at NHS and commented:

I can see the change over the 20 years, very fast change they are adapting (to euro-centric culture) those kids we touch...I don't think they will have a problem if they have our background, our culture, our interests (Interview, 17 April, 2014).

Some gleaned artefacts for Mrs Moosa also sustained the assumption of a superior social identity. In her biography she described herself as having been “cosseted and protected by family and a community from the discriminations of an apartheid environment” (Autobiography, 21st February, 2014). Relating her educational experiences, she exposed the socio-cultural exclusivity of her upbringing as she recollected her encounters with Black people in her formative years:

My teachers were Indian, my Principal was Indian and only the support staff (the cleaners and the janitors) were of a different kind, yes they were Black. After primary school I went to a high school of the same name, but by this time there were Black learners and of course a couple of Black teachers, who taught IsiZulu to these Black learners. However, the population in the school was still predominantly Indian (Mrs Moosa narrative, 21st February, 2014).

Even though Mrs Moosa is Indian and legally qualified to be a Black South African, she did not hide the fact that her formative aspirations were for a euro-centric identity. She professed that her approach to life had to be euro-centric since in the community she was brought up success was measured by how much of whiteness one would have managed to acquire. She was unequivocal in making the claim that she and her siblings were successful in this regard (Autobiography, 21st February, 2014). This aspect of her life made me conclude that her social identity and Ms Perkins' had converged. This aspect was crucial because it affirmed my view that what was happening at NHS was not racial, but rather cultural. Thus, this convergence of cultural identities accommodated the convergence of cultural explanations provided by this assumption for the artefacts and values espoused in their classrooms.

Despite their racial difference and on the basis of the convergence of social identities, Mrs Moosa held the same tacit assumptions as Ms Perkins and NHS for her, became *our* school. Affirming her being part of NHS culture she was comfortable to use pronouns *our*, *we* and *us* during interviews. What was concerning for me was that my colleagues were not aware that

these were terms of a deference, which othered others who were part of NHS. However, she confirmed her notion of a deference as she explained why Black learners were coming to NHS. It was her view that Black learners came to NHS because they wanted to learn English, as she purported that township schools taught in IsiZulu (Interview, 25th April, 2014). This came across as a contradiction considering her confession in the same interview that she did not notice difference due to the impeccable way the Black learners spoke English:

To me I just see them as the same. I don't really see the difference, because honestly speaking I tell you if I have to close my eyes and then there are two learners both speaking to me, I won't be able to say which is the Black learner and which one is the White learner or which one is the Indian learner there because they will sound the same due to their pronunciation (Mrs Moosa interview, 25th April, 2014).

According to Schein (2004), it is in such contradictions that tacit assumptions can be exhumed. In this study this contradiction confirmed that both teachers held the assumption of a superior social identity.

As suggested in the preceding paragraphs the origin of the teachers' assumption seemed to be their social upbringing, socialisation and their work experiences. In terms of Schein's analytical framework values transform when they maintain their utility over prolonged periods. It appeared that through espousing euro-centrism the life sciences teachers had internally rationalised it as the normal and better way of being. In the latter sense, other than accepting all forms of being as equivalents, the utility of euro-centrism and the associated material benefits made it a comparatively better socio-cultural identity. Euro-centrism, thus, was venerated as a superior social way of being and those who embraced it regarded themselves as superior. Having embraced euro-centrism, through socialisation at a young age and reaped its benefits throughout their adult lives, the life sciences teachers had internalised this value. The internalisation of this value transformed into a fundamental assumption that became ingrained into every fibre of the teachers' *self*. It was in this state that life sciences teachers' enactments were no longer governed by valuing euro-centrism but by a deeply-held tacit assumption of a superior social identity.

This assumption governed the teachers' social consciousness. It informed the way the teachers viewed and conceptualised those who were different from them. Of relevance to this study, this assumption informed the life sciences teachers' view and description of Black people in general and Black learners in particular. Deciphering this basic assumption made it easier for me to understand why Mrs Moosa and Ms Perkins blamed Black parents for Black

learners' disengagement in their classrooms. At a cultural level the assumption explained the teachers' belief that their role was to enculturate. The assumption explained Ms Perkins' tirade and remarks that Black learners needed to be like the other learners and Mrs Moosa blaming them for their reluctance to take advantage of opportunities opened up for them by being in schools like NHS. It explained why the teachers took it as their responsibility to control and transform Black learners so that they conformed to the euro-centric traditions of NHS.

The persistence of this assumption was also evident at NHS, where the teachers made universal essentialistic statements about Black people. Within the conceptual framework of CRP, Black learners are Black, but they are not Black people. As such, teachers ought to differentiate and attend to their Black learners as learners and not as Black people. Due to their formative contexts, notions anchored in a superior social identity, made it difficult for both teachers to differentiate and resulted in them in referencing their Black learners as Black people. In line with this assumption, Black people by virtue of being non-euro-centric assumed a lower order social identity and were socio-economically deficient. It was a common phenomenon amongst the life sciences teachers to always attempt to motivate Black learners by mentioning the presumed deficient conditions from which they hailed. For example, for Mrs Moosa (Interview, 25 April 2014), one way culture was instrumental in her teaching was when she used their upbringing, their hardships, their parents' sacrifice in sending them to NHS and probably the schools they have been to, as a motivational tool. It was her opinion that if they had come to a better school instead of going to a township school, Black learners needed to give their best. Such views I managed to explain and understand, after I had deciphered the assumption that for life sciences teachers, Black learners, like all Black people were socially-economically deprived.

What was problematic with the universalised statements about the status of Black people was that they seemed to be out of context and affirmed stereotypic notions. One of the notions being that Black learners, by virtue of being Black, were socio-economically deprived. This assumption from their upbringing seemed so pervasive that the life sciences teachers did not entertain the fact that more than eighty percent of Black learners at NHS were children of property holders of Northborough, which was a middle-class suburb. UBY and other Black learners were not experiencing hardships as they assumed and were not necessarily being bused from the townships as the teachers presumed. Their parents could afford NHS tuition fees, which were moderately high and some parents were driving their children to school. The persistence of this assumption demonstrated how little the teachers knew their Black learners,

their families and their everyday realities. This ignorance made teachers construct Black parents and Black learners in forms that were pejorative and archaic. For example, on the 16th and 17th of April, interviews with Mrs Moosa and Ms Perkins respectively, captured such constructions. Whilst responding to a question on their experiences with teaching in multicultural context like NHS, Ms Perkins pointed out some of her challenges. Firstly, she contended that Black parents were dishonest and they were not as aware of the school rules as compared to White and Indian parents because they were illiterate. With regards to teaching she said they (NHS) had stopped giving major pieces of drawing homework because in most Black homes there were no tables and comfortable furniture for learners to work comfortably, an aspect she extensively pointed out in her biography. Worse still it was her belief that Black learners had more chores to do as compared to their White and Indian counterparts because they could not afford domestic help. Whilst this could have been true in other schools, this was not necessarily the case at NHS as later revealed as I dialogued with Black learners. Affirming the assumption, Mrs Moosa was of the view that Black parents were not involved in the academic welfare of their children because they were too busy with other activities and education was not a priority for them, which was different from Indian parents. This was a contradiction to her earlier statement in which she claimed that Black parents were making sacrifices for Black learners to attend school at NHS, which implied they prioritised education.

The above life sciences teachers' assumptions about the self and others were also generically extended to Black learners' academics. Artefacts, espoused values and data from interviews sustained the deciphered assumption of a superior social identity based on euro-centric values. Life sciences teachers at NHS regarded Black learners as having limited academic potential in life sciences due to language handicap and were socially deviant. This assumption explained teachers' constructions of Black learners using markers such as behind, unmotivated, deviant, challenging, trouble and backbenchers. From holding the assumption of a superior social identity, life sciences teachers constructed Black learners negatively. For Ms Perkins, Black learners were "trouble". When asked why she regarded them as such, she remarked that they were trouble because, "they need more help...all the time" (Ms Perkins 17th April, 2014). Not only were Black learners trouble, but also "difficult" to help as their "pronunciation and the grasp of the language" was difficult to comprehend (Ms Perkins, 17th April, 2014). In her biography Mrs Moosa (21st February, 2014), affirmed this assumption as she weighed in on Ms Perkins perceptions of Black learners. For her, Black learners were a challenge because they were not conversant in English. These remarks contradicted her earlier

assertions when she said she could not differentiate her learners because they had similar accents. Such contradictions affirmed the persistence of their assumption about Black learners and not necessarily a response to the negative actions Black learners exhibited in life sciences classrooms.

As I deciphered this assumption I pondered what external challenge had this assumption resolved. From my analytical framework it followed that basic assumptions are solutions to problems. My interpretation was that as the life sciences held a superior social identity, Black learner failure was a liability. Failure of Black learners to attain euro-centrism had to be rationalised in a way that did not compromise the teachers' sense of competency, which they dearly valued. In order to reconcile their superior social identity and failure, the teachers through the assumption of a superior social identity could ascribe and apportion blame for failure to those who were different from them. This process of devolving blame from themselves for failing to come up with innovative ways to trigger the intrinsic motivation of UBY involved labelling the latter with relative ambiguous descriptors. Such descriptors included: - UBY, "having a concentration barrier; lacking a work ethic; less interested; lacking discipline, not wanting to hear" (Ms Perkins' interview, 17th April, 2014). Through this apportioning process the teachers exonerated themselves, hence maintained their superior social identity and kept their sense of competency intact. It was within this dimension that the life sciences teachers pre-emptively professed that UBY were poised to fail as expressed in the following interview remarks:

I feel they are not going to make it. I don't know what it is but sometimes I think it's a total lack of discipline and then at other times I think it's deliberate, we (Black learners) don't wanna know it's too much, right through to, it's you, we don't care, we don't want to hear (Ms Perkins, Interview 17 April, 2014).

I hasten to point out that despite expressing low expectations, the life sciences teachers at NHS had the professionalism not to capitulate and negate their professional responsibility. As we concluded this interview, Ms Perkins was upbeat as she remarked that she knew what needed to be done, but what remained was how to convince Black learners to "come along for the ride" (Interview 17 April, 2014). By knowing what needed to be done she reaffirmed the espoused value of the teacher at NHS, that of being in-charge and maintaining control even when faced with challenges, as was the school motto *Conabor* – translated, *I will try*. At a deeper level she was reaffirming her superior social identity as she claimed that she "knew what needed to be done" and at the same time she was playing it safe. For the latter, in the event of UBY failing after her intervention the explanation would be, they did not come for the

ride, a response which would absolve her of responsibility for their failure without a dent to her sense of competence or a threat to her superior social identity.

5.3.3.2 Assumption about academics and social relations

The second significant assumption that I deciphered in life sciences classrooms at NHS seemed to be a transformation through prolonged sedimentation of the espoused value about academics and results. Within CRP, teachers use their social knowledge about their learners to inform their classroom practice and make classrooms communitarian. In such a context teachers strive for academic excellence through fluid relationships with their learners. However, the prolonged utility of valuing academics and results resulted in life sciences teachers holding the assumption that life sciences as a discipline and the dictates of rational efficiency mattered more than Black learners understanding and their life-stories or experiences. After getting to know this assumption it became clearer why UBY could sit in the back and engage in other activities whilst the teachers continued to teach the front two rows of learners. With this assumption I obtained clarity on why examinations mattered and not the means. The teachers' statement that they worked with the goals rather than the means and where learners came from didn't matter, finally made sense. This assumption explained the devaluation of the social and personal that was observed in the interviews which revealed that the teachers did not know UBY by name even though they had taught them in years prior to grade eleven, whilst with learners of other race groups they mastered both name and surname as observed with Ms Perkins as she tried to describe learners in her life sciences class:

I will do it individually...Okay let me say go to my last lesson. Patrick Pretorius*, sweet kid, stayed behind, offered to help, maybe most probably skipping lessons, but apparently his teacher wasn't upset. I sent for him to come down...so cooperative, good like anything. He was joined by ...umm let me think of this Black kid, can't seem to remember his name, he came and offered to help...The kids who were working, Shayne Whitley* also a White kid...let's try and change my race group, umm...let me see Shozi, working very nicely, poor Molefe who didn't know what he was doing...umm the twins so alike they are, am trying to remember their names, one ends with 'la' and the other one 'le'...Ngindi walked in late that's the length of the matter, settled in...except I caught him once at the back he was trying to find what hypothesis meant...The Indian children, oh my little Indian girls they headed for the back...formed a little club, conference and did their thing beautifully...well it's them...(laughing) (Interview, 17th April, 2014)

What became clearer was that UBY whose surnames and not names could be remembered were those who sat in the front row or participated like the White and Indian learners. Those UBY that the teachers could remember were cast and constructed with the negatives. Otherwise those UBY who were in-between seemed anonymous and seemed unspoken of like the poor Molefe at the back or Ngindi who was recalled because he was trying to cheat. Later on I learnt that

UBY who were known by name and surname at NHS were those that were considered deviant because when the paper trail was generated for disciplinary action, such details were necessary. Such positive identification was also crucial in staff briefings as other teachers needed to be on the lookout for these learners. Such details were usually written on one of the boards in the staff lounge. Understanding these artefacts ceased to be problematic once I deciphered that for life sciences teachers, social relations did not matter, especially towards UBY.

CRP hinges on life sciences teachers knowing their learners' interest and the integration of these interests in pedagogy. However, the dominance of and emphasis on academics as deciphered above explained why life sciences teachers at NHS were unaware of their learners out of class life. When asked about Black learners' interests, Mrs Moosa was vague and superficial "some of them yes, sports, phone, some going out to **clubs**, some of them **alcohol**" and when I probed her on whether there was any connection between their interests and her teaching, her answer was concise "umm no, not actually" (Interview, 25 April, 2014). The teachers' responses confirmed how entrenched the assumption of academics superseding the social was despite the teachers in the same interviews acknowledging the importance of integrating learner interests in pedagogy. This was not surprising, because, according to Schein (2004), assumptions are resilient to change and individuals may even continue on a trajectory which may not seem natural as they safeguard their assumptions. Ms Perkins (Interview, 17 April, 2014) was fully aware of the importance of social connectedness with her children. In responding to why there was a disconnection between her teaching and learners' interests? She remarked, "Maybe because I don't know where they are coming from...exactly what their experiences are...do we pick on these kids enough". Mrs Perkins rationalised and defended her shortcomings in developing a relationship with UBY in her life sciences class in three ways. Firstly, she attributed it to large classes, and then she shifted to the need for academic success hence the need to focus on what mattered – academics. However, just like Mrs Moosa later on she also apportioned blame to the UBY by contending that:

No information is forthcoming. They don't come in and say you know my big brother, very rarely will they even come and say do you remember my old brother you taught ... Whereas for the others (racial groups) you might get a couple who say my big brother sends his regards, or my sister, or my dad says you taught him, I don't know, they (UBY) are much more private, yes there is a concern, why? Do they feel inferior? Do they feel it's their home, they don't want to be known? (Interview, 21 May 2014).

One fact Ms Perkins was not mindful of as she made this statement was that the majority of Black learners at NHS were their family's first generation in attending this school, as opposed to some White learners whose parents she had taught.

Mrs Moosa's rationalisation was that it was UBY who did not want to be close to them as they felt the teachers did not know their circumstances. On being asked what she had done about this, she was remarked "Do we have to do that? That's my question. Do we have to do that, do we actually have to correct and say we know your circumstances, haven't we all been through some circumstances?" (Interview, 25 April, 2014). This remark affirmed and exposed how strongly held this assumption was and also reaffirmed the previous two assumptions - that of social identity and positionality. Further affirming the assumption that the social was trivialised she concluded:

Maybe they just feel we don't understand them being Black. There is nothing actually that you can do about it, I think it's maybe to me I have come to a conclusion that maybe they are just comfortable with the people they are familiar with, people they think are easy to communicate with or people they believe know where they have been or know their circumstances (Interview 25th April, 2014).

What was intriguing with this assumption was its overt cultural bias. My observation was that academics mattered more than relationships in the context of difference. Where there was cultural congruency with some learners or the learners showed the potential to produce results the teachers engaged more communally with them. I observed this in the way that Mrs Moosa interacted with front row learners as well as with Indian learners. Similar interactions were observed with Ms Perkins and the learners at the first two tables. It was within this context that I qualified this basic assumptions as, academics mattered more than relations in the context of difference or academic limitation. In trying to understand this qualified assumption I considered the teachers espoused values. The life sciences teachers valued their subject knowledge and as experts they valued learners who seemed to have grasped the transmitted concepts. These were the learners who sat at the front. Such learners also had the potential of producing results, and the teachers being aware of this potential regarded it as worthwhile to nurture them. From the conceptual framework of intrinsic motivation what the teachers were nurturing were not results but their sense of competence. Thus, the cultivation of relations was mutually beneficial.

What emerges from abstractions above is that on the basis of this assumptions, the life sciences teachers seemed reluctant perhaps to invest in relationships that had nothing in it for

them. Converse to CRP tenets from which fluidity in relations promoted academic excellence, premised on this assumption, academic excellence and the potential for producing good results oiled teacher learner interactions. The latter endowments captured the teachers' attention and caused them to draw closer. But what were the challenges that this assumption was a solution for? Firstly, this assumption relieved the teachers from the anxiety of planning for diversity in their classroom. By creating impersonal non-communal classroom spaces the teachers averted the rigorous engagement necessary for multi-cultural teaching. Secondly, it seemed this assumption was a subtle symbolic way of coercing those who were culturally different to assimilate, so as to enjoy proximity to the teacher. Thirdly, for the *self* this assumption had utility in maintaining the teachers' sense of competence, as learners tried to perform and out-perform each other so as to relate to the teacher. Lastly, this assumption cast the teacher as inaccessible and as such remained a mystery. From the mystique the teachers would continue to control and force compliance without any need for communication, especially with those who were different from them with no language capacity to engage. Thus, in the latter sense this assumption had utility in rendering autonomy to the teachers – the ability to enact as a free self-governing agent.

5.3.3.3 Assumptions about power

The transformation of the espoused value of control and the ability to enforce compliance resulted in a number of assumptions which I regarded as the teachers' assumptions about power. At NHS all teachers as experts and specialists enjoyed a high degree of autonomy in curriculum implementation and classroom governance. There was a belief that teacher autonomy was the best way to get things done without reliance on Mr Xaba, Mr Ogden and other structures in the schools' management hierarchy. Thus, it was a foregone assumption at the macro-level that Mrs Moosa and Ms Perkins had the competency from their professional endowments to know what to do, how to do it and when to do it. Within this context the teachers were constituted and constituted themselves as powerful, having the power to teach and uphold the school's traditions through enforcement of school policies. Other than from professional endowments, the teachers' also derived their power from the time they have been teaching, for Ms Perkins at the time of research it was forty-two years and for Mrs Moosa eight years. They also derived their expert power from the length of time they had been at NHS.

Within CRP, power constitutes teachers as change agents actively involved in the creation of democratic learning spaces. Such teachers use their power to create accommodative conditions for all their learners, as they tackle injustice and marginalisation. In such contexts

learners volitional yield to teacher authority and collaboratively with the teacher constitute learning communities. Having deciphered the valuing of control and compliance and trying to understand teacher enactments in the life sciences classrooms I was able to decipher two assumptions. These assumptions seemed to sustain the way teachers interpreted and dealt with negative learner enactments. The first assumption I deciphered to be governing life sciences approach to discipline was that coercion could bring conformity. The second assumption was that human action could be externally guided.

Sustained by the assumption that coercion could bring conformity the life sciences teachers believed they could take charge. This assumption within Schein's analytical framework pointed to a deeper and more abstract assumption that nature could be subjugated and controlled. After deciphering this life sciences teachers' basic assumptions about power operationalisation in coercion and control some artefacts, observations and teachers' sentiments began to make sense. I then understood the teachers' mantra of *comply and complain later*. It was them who were in charge, they were the judges, jury and the executioners. However, what was tragic in my analysis was that in the life sciences classrooms lady justice was not culture-blind and exerted her power, control and influence on Black learners more than any other race group. Testament for differential dispensing of justice was when Mrs Moosa sent out Black learners to find a textbook, when a moment later she allowed a White learner to share with his colleague (Observation lesson, 29th May, 2014). This understanding based on the deciphered assumption brought closure about this and other incidents that I encountered as I went through statements of events generated in the life sciences classrooms as the one below.

Magic was caught bunking a life sciences class on the 26 March, 2014. In his statement he says "I was late to class and they wouldn't let me in so I went and sat on the field". He was taken to class by the Deputy Principal. He was given two hours detention for bunking. On the 15 April 2014 he was caught out of class again. He wrote another statement "Mrs Moosa kicked me out of class without a reason. I was sitting in class and Mrs Moosa told me to go to the back for eating. I showed her I was not eating and then when I was about to ask a question about the work she told me to go out".

The Deputy Principal asked Mrs Moosa to write a report on the learner and below is the report that she wrote:

Again as usual Magic has no work done for homework. When I ask for the work, he always has 100 words to say back to me, even after I have TOLD him NOT to speak and just be quite, but Magic never does. I CANNOT put Magic next to another learner because he is always disruptive and again if I do DARE him to be quiet, he gets angry and backchats non-stop. And if I put him alone at a desk, it still doesn't help. I CAN put him right in front of me or right at the back-he

still does not do any classwork or homework. When I REPRIMANDED him, for once again lying on his arms (slouching) and not writing down any info, he shouted : “Where must I get a page from?! I TOLD you I don’t have an exam pad!” Instead during the lesson he continuously disrupted my lesson with his body language, facial expressions and asking me for the time after I have TOLD him and warned him several times NOT to speak or to interrupt me while I’m teaching. He laughed about it and thinks all is a joke. I gave him a ‘statement of event’ form to fill in. He refused, he put it in his bag and I TOLD him to take it out, fill it in and hand it to me, he didn’t. He walked out of the lesson taking the form with him totally ignoring everything that I HAVE SAID to him. He had NO PERMISSION to walk out of the class to go see the Deputy Principal or Mr Brown. I TOLD him he was not allowed to leave. He walked out anyway mumbling some words and saying that he will go! I TOLD him to sit on the wall outside my class and write the word ‘**punishment**’ on a double page. Before I could get him to do that he decided to walk off! He DISRESPECTS ME, SHOUTS AT ME, moans, there is always an excuse (Mrs Moosa statement of events on Magic, 15th April, 2014).

From Mrs Moosa’s statement of events I capitalised *power words* and *instructive phrases* that seemed to affirm the deciphered assumption that life sciences teachers believed they had power and could control. The frequency of these words could only be explained as institutionalisation of the assumption that the life sciences teachers operated within. I am of this notion because writing the word punishment hundred times, within CRP, was not a corrective in anyway but a power deployment technology. The frequency of instructive phrases affirmed the belief that they could control and enforce compliance. The extensive nature of the report citing previous incidents and the mention of the schools discipline referral system served to show synchronisation of power deployment, an aspect of normalisation through enforced conformity.

So strongly held was the assumption about power and control that when learners failed to yield to the teachers’ power they were sanctioned with detentions and even with denial of service. With regards to the last power technology, during observations I noticed that Ms Perkins and Mrs Moosa would lock learners outside their classrooms or kick them out of class during learning time. On the surface it seemed to be punishment, but when Ms Perkins (Observations, 21 May 2014) gave the Black learner the ultimatum “either you surrender the phone or you are out of my class!” From such ultimatum emerged that what was unfolding was power game. It even played out when Black learners were denied access into class for not lining up like the “others”. That action was not corrective but a demonstration of power. My argument is if it was corrective learning experience, Black learners would have been asked to line up and walk in. On the 29th of May 2014, Mrs Moosa dragged a Black learner to Mr Ogden for *red eyes*. All these incidents made sense when I deciphered the assumption that life sciences teachers held about power and their capacity to enforce conformity.

This assumption explained Ms Perkins discourse with UBY, which was more confrontational. Her approach with UBY was more direct, as an expert and UBY being the *Other*, they were not supposed to be heard. The result of this approach was that when UBY talked back and raised their voice, the assumption made her react in a manner she described as “handling them wrongly” (Interview, 25th April, 2014). She explained her response to UBY voice as shouting at them, commandeering and belittling them with statements like “you sit down! Grow up, be a man!” which she considered very insulting considering that UBY considered themselves mature and valued their masculinity; then how could she dare say that. In rationalising her utterances Ms Perkins attributed them to anger and was simply acting out her feelings:

I don't know. It's my reaction, my instinctive reaction to his performance. It's probably to belittle him. To get the peer pressure on him, he gets laughed at, so I get them to laugh, you know, turn them against him. I do try afterwards to have a one-on-one (Interview, 25th April, 2014).

On the surface Ms Perkins regarded her response as anger, but by acknowledging that this response was instinctive, the persistence of the assumption was affirmed and its nature as taken-for-granted was confirmed. She did not have to think about her response and the negative impact of her words on UBY. Due to the internalisation of this assumption, her utterances were knee-jerk expressions of this assumption.

Informed by the assumption that human action could be externally determined the life sciences teachers relied on external modes of control and that did not extend into the domain of affect. Using rules, policies, rewards for virtue and punishment for not fulfilling them, life sciences teachers at NHS believed they could guide human action. Related to their assumptions about social identity and believing that human actions could be guided, the life sciences teachers regarded themselves as custodians and propagators of the school's traditions. As custodians their pre-occupation was with coming up with and providing learners with information. I interpreted the bombardment of learners with rafts of policies and rules to be a belief that information could generate commitment that resulted in expected enactments. The primacy of classroom rules and the code of conduct in classroom governance were visible manifestations of this assumption. As learners appended their signatures to both documents this assumption was affirmed.

5.3.3.4 Assumptions about pedagogy

With regards to pedagogy, within a CRP framework teachers are expected to have disposition for constructivist approaches. Teaching framed by CRP structures the pedagogic

setting on the lived experiences of all learners. Within CRP learners, like their teachers are equally powerful determinants of the curriculum. Acknowledging the cultural endowments of their learners, teachers within CRP open up the pedagogic setting for learners to take charge of their learning. Democratisation of the learning space, active learner involvement in modelling, design and execution of learning activities. Through fluid teacher-learner relations the pedagogic setting is characterised by multi-directional communication across ethnic groups. In such a context, whilst maintaining high expectations teachers allow learners to be themselves. Other than using the carrot or the stick, teachers within CRP search for ways to trigger and harness intrinsic learner motivation. To garner learner intrinsic motivation such teachers present learning situations that arouse critical consciousness; create spaces for learners to exercise their power; and provide opportunities for autonomy through independent learning activities.

What I deciphered from NHS was contrary to CRP aspirations for pedagogy in diverse contexts. Prolonged espousal and valuing of the transmission model of teaching had transformed into an assumption that the life sciences teacher was the sole arbiter of the curriculum. Informed by this assumption, oriented by a superior social identity, focusing on academics and prepared to structure their classrooms by force, life sciences teachers saw themselves as the epicentre of classroom discourse. With this assumption the life sciences curriculum became what Ms Perkins and Mrs Moosa created. From my lesson observations they were the ones who set expectations and prescribed what needed to be done and how it was to be done and whose predilections prevailed. This assumption explained the dominance of transmission methods in the classroom in a school endowed with teaching resources. Teaching in both classrooms was uni-linear, punctuated by intermittent callouts for some learners responses. More than the methods aspects the assumption that the life sciences teachers were the ultimate and sole arbiters of the curriculum led to the negation of learner culture, its role in pedagogy, and fuelled stereotyping and essentialistic perspectives of culture. For example, from the interviews the teachers acknowledged the pedagogical potency of learner culture, still maintained bare classroom walls and delivered content the traditional culturally sterile way. My assertions are confirmed by Mrs Moosa (Interview, 25 April, 2014) who conceptualised culture as “different backgrounds, different ways in which to practice, lifestyles ...different ways your family lives are run”. For Ms Perkins culture “norms and the practices. The way they were brought up, the traditions passed down in their family...learnt mainly from their grandparents and their parents”. From these conceptualisations it became easier to understand

why the teachers would talk of Black people and their Black learners in the same vein, as alluded to earlier. It also explained the racial-cultural stereotypes in the examples they used – Blacks and *thokoloshis* observed in the life sciences, as well as the use of historical references some of which no longer applied in 2014 at NHS, like Ms Perkins remarks “I give examples like ‘*phutu*’, bread...well bread is more likely in a White English descent household” (Interview 21st May, 2014). Bread was white and ‘*phutu*’ was Black in 2014!

5.3.3.5 Life sciences teachers’ abstract assumptions

The four assumptions presented above were the less abstract assumptions I could decipher about the micro-context at NHS. However, in line with Schein’s (2004) analytical frame I managed to extend my deciphering of the micro-context culture to other deeper and abstract assumptions held by life sciences teachers at NHS. Such abstract assumption pertained to reality and truth, time and nature of space.

Other than reality and truth being determined by pragmatic debate and wholesale interactions according to CRP tenets, in the life sciences classrooms reality and truth were based on the teachers’ individual reality. The fact that teachers saw themselves as the epicentre of all that happened in the classroom, reality became what they constructed or perceived. This explained why learners needed to “tune and listen” and the teacher’s word which was supposed to carry the day (Ms Perkins Interview 21st May, 2014).

Time orientation was pre-dominantly present to near-future oriented. The teachers operated in the here and now and at time extrapolated into the near future. This was evidenced by the teachers’ preoccupation with UBY and other learners passing tests, examinations so that they would get better lives. Everything had to be chronological extending to the near future, an aspect which meant passing the tests and examinations and calendar programmes that were laid out in the year plan. Time was monochronic and the mantra was, *one thing at a Time*, with rewards for using it correctly and punishment for wasting it. They were not expected to write notes and converse at the same time. There was time to be serious, joke, or even to speak in IsiZulu. Being able to manage time was also a subtle status symbol. For the latter, being able to regard and manage time as monochronic was associated with the teachers’ superior social identity.

At a deeper and more abstract level life sciences teachers’ assumption about power resulted in a high-power-distance index which further exaggerated the notions of difference and explained the various statements which affirmed the ‘*we-them*’ typology specifically

directed at Black learners. This resultant typology supports the archaic *subject-object* discourse, through which the life sciences teachers assumed unlimited influence on technologies of control and objects in their presumed domain of control. This context influenced space management in the life sciences classrooms at NHS. With regards to the nature of space management the observed assumption was that *safe distance* needed to be maintained and every individual needed to have their *personal* space to function and locations were status symbols. This assumption explained why those who sat in front got most of the attention. They were more *white* and hence more valued even if they were Black. Through this assumption the seating arrangements and the subtle hierarchical order based on spatial positioning that they exhibited and the individuation of space were clarified and better understood.

5.4 THE ANATOMY OF THE CONTEXT IN WHICH UBYC WAS DEVELOPING

After deciphering assumptions that governed and informed enactments in the micro-context, it was possible to describe the context in more functional and technical terms. Even though I describe the assumptions at times as isolates, from the systemic frame of organisational culture, all these assumptions were part of the integrated whole which was responsible for the grade eleven life sciences classrooms' structure observed at NHS. Together these assumptions co-constituted the context in which UBYC was developing.

In the life sciences classroom, the assumption of a superior social identity and associated assumptions created a classroom structure characterised by cultural hierarchisation. In other studies, observations of hierarchies in classrooms has been attributed to other variables. For example, in Vandeyar and Killen's (2006) study, hierarchisation was attributed to race. Even though the teachers did not state or make mention of cultural hierarchies, such a hierarchy was nuanced in their contributions and observations made in this study. As they attributed all their challenges to Black learners, the teachers affirmed their fundamental attribution error. These attributions implied a value judgement through which teacher culture was regarded as inherently good for all, as such all in the learning context were expected to unreservedly abandon theirs and embrace it. The posture in context generation structured by this assumption came to supplant rather than supplement UBY webs of meanings. Such a context, through striving to supplant, threatened UBY with invisibility and marginalisation (Van Wyk, 2002).

The life sciences classroom structured by assumptions of a superior social identity presented a context that was disempowering, hence a threat to autonomy and a sense of

competency. Within the context of a superior social identity enacted structures negate the currency of *others'* cultural capital, a structure that can be perceived as emasculating through insignification and trivialisation (Nieto, 2000). The observed placement of learner culture at a lower pedestal than the teachers' hinted of allochronism and constituted marginalisation, which according to motivational theory, compromised connectedness to the life sciences classroom for those whose culture was different from the teachers'. The context generated by such a structure is one which is symptomatic denial of access, an aspect which threatens a sense of autonomy and competence (Vandeyar & Killen, 2006). In the life sciences classrooms at NHS it was my finding that failure to accommodate the needs for autonomy and competency, provided grounding for multiple challenges for the life sciences teachers. Such challenges have been regarded as relational sociologies of education and culture (Cooper & Dunne, 2000). In the grade eleven life sciences classrooms at NHS, such manifestations included all the negative UBY enactments that made the context of teaching and learning conflicted. My interpretive findings from these manifestations was that the context structured from assumptions of superior social identity positioned those outside this identity in opposition to micro-context culture, even before they engaged with the content.

Life sciences teachers' assumptions about academics and social relations, touched on two areas I regarded as crucial in unravelling the context in which UBYC was developing at NHS. It was my finding that life sciences teachers' assumptions about academics and relations provided for a context in which learners were constructed learners as *ideal* or *less than ideal*. Such teacher constructions in the context of these assumptions has been observed to incorporate classed and deficit constructive notions of appropriate behaviour (Youdell, 2003). I hasten to point that in this study, contrary to dominant discourse, life sciences teacher constructions of Black identity, and glossed over racial intonations seemed to indicate a denial of Black learner cultural agency premised on life sciences teachers' deep-seated taken-for-granted assumptions. From this understanding, what was affirmed in this study was that desegregation as a socio-political project in schools like NHS has not yielded attitudinal changes of groups to each other, but seemed to be entrenching prejudices in both overt and covert ways as teachers with a superior social identity try to retain their autonomy, maintain their competence and re-affirm their connectedness to their histories.

My findings were that with academics and results superseding relations, life sciences teachers structured the context in three ways. Firstly, they professed negatively about their learners. Secondly, they instituted rigorous control measures, which they religiously enforced

with the belief that it was the only way to help Black learners master the content to produce the valued results. Lastly, life sciences teachers, through transmission promoted the *basics-only* curriculum approach, which limited the content taught to the bare essentials. This lean curriculum was meant to provide those labelled as less ideal academically with a test or exam survival toolkit. The need to produce results resulted in teaching practices that neglected reference points grounded in other life worlds. Focusing on academics necessitated a hyper-regulated environment in the life sciences classroom. Such an emphasis drew invisible lines amongst learners with different academic endowments and tolerances for such a context. The emerging classroom architecture was one of segregation in a desegregated space. Such a context negated connectedness, a crucial component in generating and sustaining learner interest. Strict classroom regimentation and religiously prescribed learner enacting infringed on learner autonomy and was a blatant attack on their capacity to think in ways that affirmed their competency.

Through professing negatively about their Black learners' academic endowments, the grade eleven life sciences classrooms at NHS became discriminatory. The context generated from such labelling and ascription of negative labels was one which I interpreted as *reconstructed apartheid*. The architecture of this context favoured and acknowledged other ethnic groups over others. In their studies other scholars observed the same phenomenon and explained it in the context of racism (Meier & Hartell, 2009; Vandeyar & Killen, 2006). However, what emerged from this study, was that discriminatory practices transcended race and were culturally nuanced. In this context those negatively labelled on the basis of culture had their sense of competence and autonomy violated. To compound this violation, by being constituted as less than ideal, they were made to realise that they did not belong in this pedagogic setting. The mainstay of such classroom contexts becomes reductionism, with teachers expecting learners different from them to surrender their webs of meaning for academics and results. The institutionalisation of reductive processes at the micro-level created a context in which other ways of valuing, being, knowing and acting were denied expression. In the context of denial learners were expected to embrace the perceived dominant worldview in silence (Youdell, 2003).

In order to suppress learner voices and maintain their silence, grade eleven life sciences teachers deployed structures that have been classified by Emdin (2010) as constraining and constricting. This constraining and constricting context curtailed learners' inherent tenacity to self-determine, as well as their ability to engage, participate and experience competence and

connectedness. Analysis at the micro-level revealed that what was threatened by the structuring of the context premised on these assumptions was learners' intrinsic motivation. Key components of intrinsic motivation constricted in such context were competency, that is, the degree to which one believes he or she is capable of completing the task (Sealey-Ruiz & Greene, 2010) and connectedness, that is, a sense of belonging (Ryan & Deci, 2000). The context presented learners who were not capable of mastering the academic content and producing results with a crisis of validation. What was tragic within this context was that all these threats were playing out at a time when these learners were at a developmental stage when their need for a secure sense of *self* is strongest (Sealey-Ruiz & Green, 2010). Thus, as argued by theorists like Bandura (1997) and Ryan and Deci (2000), the context structured and nurtured by the life sciences teachers' assumptions about academics and relations threatened those who were not academically endowed with a failure to achieve a true sense of competence and connectedness as they struggled with self-doubt and negative sense of being generated by this context premised in this assumption. Thus, the context that arises from the life sciences teachers' assumptions was one where the three fundamental prerequisites for intrinsic motivation were neglected, particularly for the Black learners.

Life sciences teachers' assumptions about power were also observed to have significance in structuring the context in which UBYC was developing. In terms of power, this study found that life sciences teachers regarded themselves as the centre of power. Through the operationalisation of this power using Foucault's tactics (Balan, 2010), teachers tried to enforce conformity on all learners to their prescribed standards. Whilst holding the assumption of being all-powerful the teachers operationalised the notion that they could manage their classes by brute force and episodic displays of power. The unintended context generated from these assumptions was one characterised by Alexander (2003) as mirroring power-wielders and the powerless. The emergent context from this interaction was one which deliberately positioned those who were not yielding to teachers' power in ways that did not conduce the realisation of their autonomy and exercise their competence. Such a context disregarded the historicity of the Black learners and as argued by Mutegi (2011) failed to acknowledge their capacity to operationalise their power and chart their destiny. With the context framed by this obsession for localised power, learning life sciences for UBY appeared to be a labour intensive process, a context which Emdin (2010) argues threatens Black learner autonomy and expunges their affinity for active engagement in their learning. Thus, Foucault's institutionalisation of power (Sadan, 2004) at NHS, ended up not only creating a context that threatened Black learner

autonomy, but also expunged their affinity for questioning and communal engagement. The strictures that characterised this context seemed to minimise opportunities for learners to embark on their own learning adventures in the life sciences classrooms. Such a context unintentionally threatened learners' opportunities to affirm their competency and assert their autonomy.

Operationalisation of the life sciences teachers' assumptions about power also precipitated Foucault's differentiation and individuation of space (Sadan, 2004). Such operationalisation, as observed in this study and elsewhere by Vandeyar and Killen (2006) resulted in a tiered classroom. The tiered system resulted in two major formations, those whose cultural capital (Bourdieu, 1990) had currency with the teachers and those whose culture was deemed to have no currency. Thus, teacher assumptions of power, like assumptions about social identity and academics, generated a context that was not only differentiating but exclusionary. By being exclusionary this context could not be responsive to multiple realities. Failing to respond to multiple realities within the life sciences classroom premised on a nexus of differentiation and exclusion structured the pedagogic setting as alienating. Such a context was not conducive for connectedness.

With regards to pedagogy, the teachers saw themselves as the ultimate arbiters of the curriculum. Informed by this assumption, life sciences teachers at NHS structured classrooms towards the transmission model of pedagogy or what Mutegi (2011) identified as the indoctrinating curriculum perspective. The context of teaching in the life sciences teaching was postured towards force-feeding learners with sciences concepts and expecting them to imbibe them. The context of teaching that emerged was one which rendered learners redundant as they were supposed to learn in silence. Such a context denied learners the opportunity to hone their academic prowess, test and refine their ideas, all significant contextual aspects in the facilitation of autonomy and competence. What I found problematic with this context and was later intimated by UBY as I interacted with them in dialogues, was that the context generated by the life sciences pedagogic assumptions cast learners as incapable of taking charge of learning. Delpit (2006) after making a similar observation, indicted the operationalisation of this assumption as culpable in creating the illusion of learners, especially those who may be culturally different from the teacher, as mis-matched to schooling, hence could not be left to take charge of their own learning. Packaged this way science is framed as a stage for actors to read a prescribed script and a discipline in which only those with a specific

cultural capital can participate (Barton & Yang, 2000). In such a context the need for competence and autonomy remains unattended as the curriculum revolves around the teacher.

Another critical finding in this study with regards to this assumption about pedagogy involved communication patterns and the context they generated. Centralising curriculum around the teacher made communication linear and bi-directional, that is, from teacher to learners and from some learners to the teacher. In order to garner all the attention on themselves, in the name of discipline, the life sciences teachers discouraged multi-lateral communication. Learners were expected to focus on their work and desist from non-prescribed engagement. Paying attention was a non-negotiable imperative. The context generated was one in which stoic and fact-laden life sciences was supposed to be learnt within individuated settings. Such a context shunned collaboration and communal interactions outside those prescribed by the teachers. In such a context learner freedom to commune and connect was curtailed, an aspect which negated their need for connectedness. This context sustained separation in desegregated spaces and did not foster collegiality amongst learners. Without connectedness historical barriers persisted amongst the various ethnic groupings. Such a context propagated and sustained differential performance and failed to harness varied potentialities in the life sciences classroom and facilitate learning opportunities for all learners. Due to the context not facilitating connectedness, those who were experiencing academic challenges suffered in isolation and their competence never realised.

5.5 CONCLUSION

In this chapter I attempted to present the macro and micro-context in which Black learners were situated and such constituted the external environment they had to adapt to, as they became UBY and evolved UBYC. Using Schein's (2004) model, I attempted to present the artefacts, values and basic assumptions of these contexts both at the macro-scale (school level) and micro-scale (life sciences classroom). It was my assumption that such treatment would render the deciphering of UBYC basic assumptions tenable. Infusing CRP in the analysis provided what I adjudged to be a fair barometer for assessing how amenable the dynamics of the life sciences classroom measured against the ideal. In the last part of this chapter I tried to theorise the context against my analytical and conceptual framework. It was my view that such a treatment would render a deeper meaning to external environment that Black learners had to negotiate and resolve, a process which culminated in the evolution of UBY and UBYC. In the next chapter, as I try to address the second research question. I present

UBY, their artefacts, espoused values and ultimately their tacit assumptions, the latter being UBYC (Schein, 2004).

CHAPTER SIX

URBAN BLACK YOUTH CULTURE

6.1 INTRODUCTION

In the last section of the preceding chapter I describe the context that UBY in life sciences classrooms experienced. As I explored the micro-context I witnessed the puzzling phenomenon that my colleagues were grappling with. Document analysis and the life sciences teachers' accounts in interviews augmented what I witnessed in situ and from this triad I developed a superficial mental collage of what was happening in the life sciences classrooms at NHS. After witnessing *what* was happening the research endeavour shifted to *why* it was happening. In the context of organisational culture, culture is the *why*. Thus, understanding why UBY were enacting in the ways observed during the exploration of the micro-level organisation implied deciphering their culture or according to Schein (2004) their basic tacit assumptions. This was the essence of the second research question: - what is the nature of urban Black youth culture (UBYC), as observed in desegregated life sciences classrooms at NHS?

Within the ambits of organisational culture, deciphering UBY basic assumptions entailed an interpretive gleaning of their solutions to contextual challenges. The imperative for presenting the context in the previous chapter was to capture the external reality that UBY were to adapt to. Within the framework the inevitability of the challenge of adaptation arose from UBY not being the architects of the context. Their survivorship in this context therefore lay in the ways they solved the challenges presented by the context. Solutions to these contextual challenges are the essence of basic assumptions, hence, culture. To understand how UBY developed these solutions (basic assumptions) it was important to interrogate who they were and their espoused values. The essence of proceeding from espoused values instead of the orthodox approach, artefacts, espoused values then basic assumptions, was that to understand UBY challenges emanating from the context, it was imperative that their values were gathered. As alluded to earlier, espoused values embody the group's original sense of being, what they ought to be, as opposed to what they are. It is from this understanding that this chapter is organised. Firstly, I present UBY original sense of being, what they thought they were and they could be. After presenting their espoused values, I proceed to present their artefacts. Analysing the two resulted in the unravelling of some UBY basic assumptions informing their enactments in life sciences classrooms at NHS.

In line with the approach outlined above, as part of espoused values I present the UBY who voluntarily responded to the invitation to participate in the seven co-generative dialogues that I conducted between the 12th and 20th of May 2014 during the second school term. In the first segment of this presentation I give a synopsis of UBY lives from their own perspective without any fictionalisation but as captured in their narratives (autobiographies). My invocation of such an approach was that espoused values could be captured from personally penned UBY thoughts. Before presenting their narratives, the next section briefly introduces the ten UBY followed by a section which presents their narratives.

6.2 ONE ON ONE WITH THE UBY

In this section I present the ten UBY who were participants in this study. In the table (6.1), a brief presentation of ten UBY profiles is given.

Table 6.1 Urban Black Youth profiles

Name	Nickname (AKA)	Gender	Age	Place of Residence
Shawn Shozi	Big Sho	M	16	Suburbs
Baleka Khikine	Cool Guy	F	17	Township
Loyiso Gwala	Top Dog	M	16	Suburbs
Luwanda Mseleku	Cheeky-Lwa	F	16	Suburbs
Lungisani Twala	Just-Lungi	F	17	Suburbs
Sinakho Mbele	Shy-Girl	F	16	Suburbs
Bheki Sabelo Mafa	Big-Man (Biggie)	M	17	Township
Mlungisi M. Shelembe	Magic	M	16	Township
Mzomuhle Mbeje	Naughty-By-Nature	M	18	Township
Siyabonga V. Mlaba	Flambo V	M	17	Suburbs

To augment data from observations and dialogues UBY were asked to generate their own narratives. To guide the scope of narrative in the context of relevance to this study, I provided them with headings to facilitate their writing. Some of the headings included:- **the things I like about myself; some things about myself I have to improve on; my heroes (favourite people are); my favourite things are; my least favourite things are; my dreams are to; and I know I can achieve them because I am; all the things I worry about** (Appendix 7). During the first co-generated dialogue to assist with introductions I posed the question; who am I? Each of the ten learners responded by stating their names and other descriptions of who they are.

From their introductory characterisations I apportioned each of the UBY a nickname, which amongst UBY was known as an AKA- (actually known as) which meant actually known as. These nicknames are the pseudonyms used in this study and are not known to people other than the participants and myself. On original artefacts original names were replaced with their pseudonyms. I apportioned these names from my observation of the cultural dynamics in the group. I was of the view that these names would capture the group dynamics I experienced with UBY. For the first nine learners, their profile consists of contents of their narratives as well as their introductory remarks. However Big Sho's profile consisted only of data from the dialogue as he did not submit his narrative but participated in all dialogues.

From the narratives and the first co-generative dialogue I managed to identify some UBY espoused values and these are presented in section 6.3 below.

6.3 UBY ESPOUSED VALUES

The first significant UBY espoused value that I managed to identify as I analysed their narratives was how much they valued their being. In their narratives, under the heading, the things I like about myself and in their introductory remarks during dialoguing, UBY espoused this value. They used positive attributes to describe themselves and explicitly showed how comfortable they were in their skin. In her narrative Shy-Girl posited "the things I like about myself are the way I am caring, the way I make people laugh...my personality and I think my appearance is quite good" (Shy-Girl, Narrative, 2014). During the first dialogue she reaffirmed how positively she regarded herself as she introduced herself. "Hi, I'm Shy-Girl, I'm pretty" (12th May, 2014). In his narrative for the things he liked about himself, Top Dog mentioned "I am beautiful (handsome), honest and loyal and trustworthy, like laughing a lot, outspoken and friendly...and enthusiastic" (Top Dog, Narrative, 2014). During the first dialogue Top Dog introduced himself in the following manner, "Hi, my name is Top Dog, one of the popular kids in this school. I grew up in the suburbs, I am a suburban guy, a simple cool guy. I'm one of the weirdest guys that are infatuated with life, am out-going and ambitious" (Top Dog, Dialogue, 12th May, 2014). In the same dialogue Flambo V espoused this value as he introduced himself:

Hi, my name is Flambo V, I grew up in Mandeni (township) and now live in Highlands (one of the suburbs around Northlea). I love going out with girls, I love socialising with people. I am *sqenge* (isiZulu urban slang for smart) and intelligent (Flambo V, Dialogue, 12th May, 2014).

This value was further confirmed from UBY narratives as they stated how they felt about themselves. With regards to how they felt physically they responded, "I feel great, I don't have a problem with my body (Cool Guy, Narrative, 2014). In his narrative Naughty-By-Nature

responded “strong, fit, great eyes, nice hands, nice arms, muscles, handsome face...” (Narrative, 2014). In their narratives when responding to things they worried about, none of their responses pointed to any physical, but rather socio-emotional aspects. In her narrative Cheeky Lwa described how she felt emotionally, “I feel left out and don’t fit” (Narrative, 2014). Responding on emotional aspects of her life Just Lungi posited “I have my emotions all over the place, I don’t really open up about my emotional and mental issues, I believe nobody cares and I will figure it out myself” (Narrative, 2014). Such responses pointed to the fact that though UBY had a positive view of self and greatly valued their being, their lives were not as perfect especially socio-emotionally. As they related what they were worrying about the dominant source of this socio-emotional dissonance emerged as the school and their education. According to Big Man his worry was “homework, assignment activities, late sleeping, work that takes hours” (Narrative, 2014). In her narrative Shy Girl wrote “I think it’s the fact that I have all eyes on me at the moment in school. I have to play by all rules, which I do anyway. I have to be studying all the time and as a human that can be brain-wrecking” (Narrative, 2014). For Magic it was also “exams and school work and the grade I’m in” (Narrative, 2014).

When I considered UBY espoused value of their being and tried to reconcile it with their worries two possible scenarios emerged. Firstly, there was a possibility of UBY overvaluing their being and their physical endowments. If this was the case research needed to explore what it was they were accomplishing through this overvaluation of *self*. I then needed to consider their artefacts and explore their basic tacit assumptions. Secondly, there emerged a possibility of UBY having genuine challenges in the context of schooling despite having a positive social identity and high self-esteem. In this regard the challenge for this study became to reconcile such a glaring contradiction within the context of basic assumptions. However, what was significant with their narrative was that they indicated that their narrative were an honest testament of their lives.

The second value espoused by UBY was that of being ambitious and the valuing of the future. UBY dreamt of excelling in all they endeavoured to do. None of the UBY seemed pessimistic and hopeless of what the future held for him or her. Ambition seemed extremely valued and despite their varied backgrounds there was convergence on their dreams of a good and great life. In their narratives UBY were asked to respond to the phrase - *My dreams are to*: Under this heading my idea was to capture what life was supposed to be if all things worked according to their will. According to my analytical framework this is what life ought to be as opposed to what it was (Schein, 2004). Thus, as they responded to this prompt UBY were

projecting what they thought they were going to be, rather what they were. As they did this within the frame of organisational culture, I discovered how ambitiously they valued their future.

In response to the prompt, my dreams are to: Cool-Guy in his narrative posited: “finish school, become a nurse and have a bright future” (Narrative, 2014). Responding to the same prompting phrase Top Dog was more poetic “to achieve my goals of being a lawyer...Being independent, writing my own poetry, novels and books. Finding myself and what I was born to do” (Narrative, 2014). For Cheeky Lwa the life meant to “become a world renowned designer, travel the world...and truly make my parents proud and pay them back for all they have done for me” (Narrative, 2014). Shy Girl’s response was more grounded “do well in school, get 80% in every subject. Get at least 3 distinctions in matric. Get a good job. Get a house and a car before 25” (Narrative, 2014). For Naughty-By-Nature the dream was to “become a doctor, forensic scientist, paediatrician, graphic designer...engineer” (Narrative, 2014). Not to be outdone and true to his AKA, Big Man posited a more complete dream:

To be a doctor or an engener (engineer), finish school and go to a good college or university. Getting a good job, have a loan. And maybe winning a lotory (lottery), being rich. And speech (speak) some South African language properly...Get wife and kids in a beautiful house at penthouse in a nice province. And travel some places around the world and not even worrying about stress no matter how big or small the problem (Narrative, 2014).

Through the above intimations UBY espoused what they thought life ought to be. From these statements, though I captured them as dreams, UBY highlighted what things could be. Within Schein’s analytical framework in what things could be, UBY registered their aspirations of what things needed to be. Implied in the latter was UBY entertaining the notion of having a future in which they would be holistically autonomous and overtly adjudged successful or competent by all material standards. Thus, abstractly, UBY espoused the values of autonomy and competency. In espousing this value UBY also projected a positive self-image which seemed to confirm the espoused value of valuing their being.

Contrary to notions held by their teachers, UBY in life sciences valued their academics. In their dreams they made mention of their aspirations to finish and pass school. For some passing was not enough, they were aiming for a certain number of distinctions and others were aiming for careers they knew passing matric very well was an imperative. Espousing the value of academics, UBY wrote about how academics were a cause for concern, though they expressed it in diverse ways. For Cool Guy, it was the marks, for Top Dog, it was school work

and school marks, for Magic and Naughty-by Nature it was examinations and passing. When prompted in their narratives to highlight the things that they needed to improve, academics also topped the charts. Top Dog posited “I can do better at school. I was born for greatness” (Narrative, 2014). Naughty-By-Nature, on things he needed to improve commented, “My grades, my behaviour, my knowledge, my love for school”. Even though academics were an area UBY needed to improve in, the fact that they prioritised it, they were projecting it as an important aspect of their lives which ought to be ideally better than what it was.

UBY valued being successful in school. On things they worried about UBY identified academics as alluded to above and registered their intention to work harder and improve their marks and do all that they were expected to in school. These UBY notions confirmed this value. Responding to how she was going to resolve her academic worries Cheeky Lwa stated “studying, I am quite intelligent and if I put my mind to it, I could probably do it (pass)” (Narrative, 2014). For Cool-Guy, the worry was “my marks” and to remedy the worry he suggested “I can try harder to improve my results. I need to study everyday when I get home from school. Maybe have a study timetable and spend more time studying than on other things” (Narrative, 2014). Linking his solution to the other value of the future, Top Dog remarked “I can do something about my school marks, just study hard so I won’t have to worry about financial matters the time I have to be independent” (Narrative, 2014). After identifying the source of his worry, Big Man’s solution was more concise “Like school assiment (assignments), I should do it on time, instead of leaving it to the night before the real due date” (Narrative, 2014). Analyses of UBY solutions indicated that they valued their school work and expressed an awareness that the responsibility to learn lay with them. The significant finding in these narratives was that academics and academic success had a place in UBY webs of meanings.

What was intriguing with UBY with regards to academics was that as much as academics seemed greatly valued, they were the least of UBY favourite things. School work was ranked low in terms of learner interests. In the top five of their favourite things school or academic disciplines did not feature. For example, for Just Lungi it was “eating, watching movies, sleeping, singing and hanging out with friends or family” (Narrative, 2014). For Magic it was “my phone, my family, chilling (being with friends), eating and laughing” (Narrative, 2014). On Cool-Guy’s list there was “cartoons, music, laughing, helping others and friends” (Narrative, 2014). What was disconcerting was the fact that schooling and school work featured in the top five least favourite things at times ahead of chores. For Just Lungi the least favourite

things list was sequenced as “going to school, crowded places, noise, judgemental people, hanging out with a lot of girls...” (Narrative, 2014). For Naughty-By-Nature it was “maths, studying, annoying people, chores, rowdiness” (Narrative, 2014). This contradiction between the espoused value of academics and UBY’s list of favourite things had cultural significance in that it presented a context of divergence between what ought to be and what is. This contradiction prompted further exploration in an attempt to establish why valued academics were not topping the list of UBY favourite things. The other dimension that needed exploration was how UBY were dealing with this apparent contradiction. Efforts to explain this contradiction lay in the domain of basic assumptions as it was in it that solutions to such contextual challenges lay.

Another crucial value espoused by UBY was the centrality of relationships. One of the explanations that UBY gave for dreaming big and believing was that they had a strong support network in family and friends. In their dreams they also longed to be successful so that they could make a difference to the lives of those that mattered to them – their parents and extended family and friends. The centrality of relationships was also foregrounded as UBY mentioned their heroes or favourite people. Only twice were teachers mentioned by the ten UBY as favourite people. Conversely for all of them parents, family and friends were favourites and icons for African struggle like Nelson Mandela and Robert Mugabe were also touted as heroes and pop and soccer legends also featured as heroes. It seemed parents were considered as heroes for the sacrifices they were making for the UBY. And the political legends were venerated because UBY regarded them as icons of the Black man’s struggle and people who had stood up for their people as pointed by Cool Guy:

I’m inspired by Dr Martin Luther King. The thing he did for his people and the way he reacted to White domination and adversity. I think I can get there by understanding people, understand the challenges that you are facing (Dialogue 20th May 2014).

Observations in class also confirmed the centrality of this value, in the manner that UBY sat, defended each other and interacted with each other. What was of cultural significance other than the value per se, was that life sciences teachers were not regarded as role models or heroes even though UBY valued academics and academic success. The questions that arose after this finding were, why were their teachers at NHS not featuring on their lists of significant others? Secondly, how could UBY espouse the value of academics, academic success and futures premised on academic success without facilitators of such featuring on their lists of significant

others? For these questions there was need for explanation. This explanation lay in analysing such values against artefacts to decipher basic tacit assumptions.

One of the prompting statements meant to help UBY write out their narratives was: *I know I achieve them because I am....* This prompt came after UBY had outlined their dreams, so the question was how did they know they could achieve their dreams? Just Lungi knew that she could achieve her dreams because she “believed, strong, powerful, hardworking”, and that if you “want something you will go and get it” (Narrative, 2014). For Cool-Guy achievement came from being “confident, willing to try, ambitious” (Narrative, 2014). According to Shy-Girl achieving her dreams was possible because she was “determined to achieve them”. Magic thought he could achieve as he posited, “because I am awesome, really amazing and I try my best in everything I do, especially my school work” (Narrative, 2014). For Naughty-By-Nature achieving his dreams came from him being “intelligent, humorous, kind, handsome, fit, energetic, strong, powerful, hardworking, organised, confident, ambitious and creative” (Narrative, 2014). From these statements my interpretation was that UBY saw and regarded themselves as capable and competent. Therefore the espoused value by UBY was that of independent capability. In this value they espoused the capacity to self-determine. They saw themselves as capable and endowed with potential to accomplish whatever they put their mind to. Not only were UBY espousing their inherent capacity to enact and accomplish they also espoused their ability to do so autonomously. The dominance of “I” in their narratives indicated the latter aspect of this espoused value. At a deeper, more abstract conceptual level this espoused value pointed to UBY valuing autonomy and competence.

From espoused values UBY were ideally profiled. Through espoused values aspirations and their ideal *self* was captured, but was this what they were in the life sciences classrooms context? In the next section (6.4) I present UBY artefacts under the theme, UBY in Action. Whilst espoused values captured what UBY ought to have been, in the following I present what UBY were in life sciences classrooms. The presentation of artefacts captures the UBY enactments witnessed as well as documented enactments from UBY files from NHS’ administrative office. The purpose of this endeavour was to adjudge artefacts against espoused values and from the analytical frame of organisational culture decipher UBY basic tacit assumptions or UBYC.

6.4 ARTEFACTS – UBY IN ACTION

In this section I present what UBY did in life sciences classrooms at NHS from the teachers' statements of events and my observations. Some things that UBY did, have already been highlighted in the previous chapter when I described observations made in the life sciences classroom. The first aspect about UBY was their sitting options in which they seemed positioned furthest away from the teacher or from the front. For the three times I visited Ms Perkins and Mrs Moosa's classrooms, I observed that UBY sat the furthest from the teachers. In both settings UBY sat at the back as shown on the seating plans for my visit to both classes on the 24th of April, 2014.

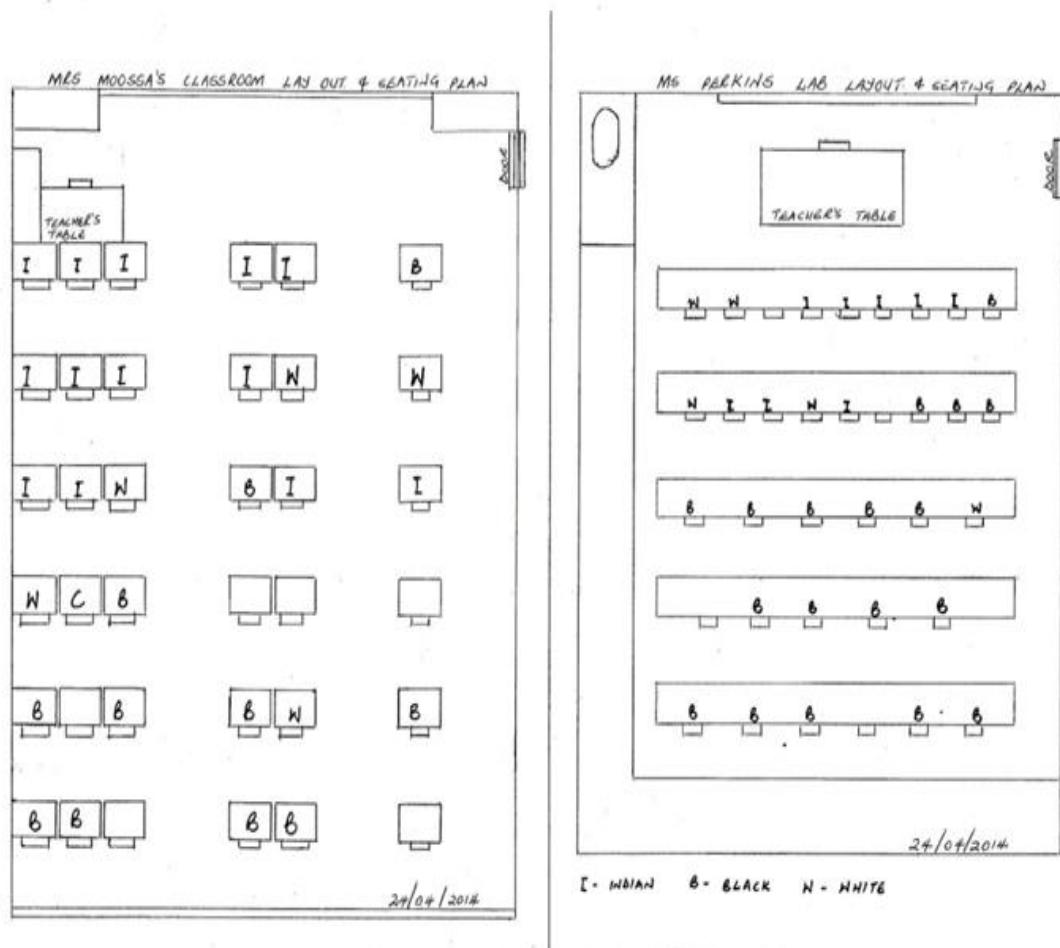


Figure 6.1 Seating plans of Ms Perkins and Mrs Moosa's classes

There were two other things that I observed as UBY sat at the back. One was that there were some who would keel over and sleep throughout the lesson and the other extreme which was the majority was of those who would do other things like completing assignments or doing their homework or engaging with their phones. On the 11th of June Mrs Moosa had to stop to

remove a Mathematical literacy book from an UBY in the fourth row as he was doing homework rather than focusing on the lesson. It was with the second extreme that there was a degeneration of discipline in the classroom. This aspect was observed from a filed statement of event by Flambo V, an UBY who related the following incident:

I was completing an assignment while Ms Perkins was going through a test, that I didn't write due to me being absent on the 13/02/2014. I was asked to put it away, which I did, then asked Ms Perkins what I should be doing. The least she could have done was to give me a question paper. I was then told not to ask stupid questions. My reply was then "How is that stupid". I was then told to "Shut my mouth" which I find very offensive because why should we respect those who talk to me like I am nothing. So I told her to ask me nicely or maybe say keep quiet. I was then told to "Shout my mouth" again. Because she didn't agree to ask me nicely she then said something about me being a kid and I was told to get out. I refused then Mr Brown was called. He told me to take my attitude and put it where it concerns somebody else so I told him it won't fit. If my own mother doesn't believe in telling people or me to shut up then why should I have to take it from a teacher! (Flambo V Statement of events, 14th February, 2014).

Related to the above observation was the second UBY enactment. The second artefact I identified about UBY was their non-involvement or participation in the life sciences lessons. Compared to their White, Indian or Coloured peers, UBY engaged less productively with their teachers or participated less in the life sciences classes. They did not ask or answer questions in the life sciences lessons. I noticed that at times Ms Perkins would spread her questions even to the UBY at the back and they kept quiet until she moved on to some other learners or just proceeded to answer the question herself. This artefact was further confirmed by Just-Lungi as she tried to rationalise this enactment "we don't (ask questions) because they don't pay attention to us anyway". (Dialogue, 16th May, 2014). Further confirming this non-participation and non-productive engagement with their teachers Big Man posited, "we don't ask (questions in life sciences) because we are afraid to be wrong". Through these rationalisations UBY confirmed the persistence of this artefact in life sciences classrooms at NHS.

Another observation about UBY was their propensity to miss life sciences classes. They accomplished this in two ways, that is, by being kicked out of class or by bunking the class altogether. With regards to the former from classroom observation I noticed that whenever learners were presented with an option to comply or leave the room, they went with the latter (Observations, Ms Perkins, 21st May, 2014). With regards to bunking I noticed that it seemed impossible for the two teachers to have total attendance and it was mainly the UBY who happened to be absent in most cases. Their whereabouts could be speculated on, but an examination of the archived statement of events allayed all speculations as it became clear that the learners were deliberately missing classes. The following statements of events from the

school archives by other UBY who were not part of the dialoguing cohort confirmed this enactment. Their statements also indicate some excuses UBY gave as they responded to the allegation of bunking Mrs Moosa's and Ms Perkins' life sciences classes:

Incident report /statement

Date: 26/02

Name: KUYANDA THABETE IC

.....Allegation Bunking

.....Statement I was caught sitting behind Ms Perkins' class. I was sitting here and the principal caught us (both the Principa) and Deputy Principal). They thought I was bunking but I wasn't. I was just sitting around since

24/02/2015 Pen Condon

I deny/accept the allegation

Signed: [Signature]

Redslip Done.

Statement of event

LEARNERS NAME MLUNGI Grade 11
 Date 14/04/14 Time 09:28 Place _____
 Mother's name _____ Father's Name _____
 Cell number _____ Cell Number _____
 Name of Educator/HOD/Deputy Principal/ Principal requesting statement _____
 Short description of event _____

 _____ EDUCATOR SIGN _____

ALLEGATION – (Example Level 2 disobeying an instruction.) – 2 hours detention
bulking

Statements I couldn't go to class because Mrs MOASA didn't want me in her class because I was wearing my Colliers Pant which she said she didn't want but she My other teacher didn't have a problem with it

Corrective action 2 hours detention (see attached/ see other side)

Learner Accept / Reject Corrective Action
2 hr detention - 15:00 - 17:00 Accept ~~Reject~~

Educators Comment (Phone learner mom and _____)
 _____ Date _____ Initial _____
 Year Head and HOD, DP, Principal Comment _____
 _____ Date _____ Initial _____
 Parent Comment _____
 _____ Date _____ Initial _____

Statement of event

LEARNERS NAME BHEKI Grade 11

Date 16/04/13 Time 9:10 Place STANDS

Mother's name _____ Father's Name to

Cell number _____ Cell Number 12

Name of Educator/HOD/Deputy Principal/ Principal requesting statement _____

Short description of event.
I was caught sitting on the stands on accusation of bunking

EDUCATOR SIGN _____

ALLEGATION – (Example Level 2 disobeying an instruction.) – 2 hours detention
Bunking

Statements I was not bunking I was watching A sitting on the stand because I was not allowed to be in class because I was not there.

Corrective action 2 hours detention on the stands (see attached/ see other side)

Learner Except / Reject Corrective Action I REJECT

Educators Comment (Phone learner mom and...)
FINAL WARNING.

Date _____ Initial _____

Year Head and HOD, DP, Principal Comment _____

Date _____ Initial _____

Parent, Comment _____

Date _____ Initial _____

Statement of event

LEARNERS NAME SIYABONGA Grade 11C

Date 25/03/14 Time _____ Place _____

Mother's name _____ Father's Name _____

Cell number _____ Cell Number _____

Name of Educator/HOD/Deputy Principal/ Principal requesting statement _____

Short description of event.

EDUCATOR SIGN _____

ALLEGATION – (Example Level 2 disobeying an instruction.) – 2 hours detention
Bunking the school period after told not to bunk the lessons this week.

Statements I deliberately disobeyed the instruction by the educator.

Corrective action I will go to detention on Friday from 10 to 12 when school stops at 10:30 (2hrs detention) (see attached/ see other side)

Learner Except / Reject Corrective Action I except the 2 hours detention on Friday.

Figure 6.2 UBY bunking statement of events

Closely related to non-participation in the life sciences classes was the issue of UBY and time management. As was noted in observations in the life sciences classroom UBY arrived late for life sciences classes with both Mrs Moosa and Ms Perkins. It seemed as if UBY, especially those who sat at the back had an unofficial five minute rule which entailed that for the life sciences that I observed they would arrive for class almost five minutes after the lesson changeover. This lateness did not occur during the lesson changeover only but also occurred even when learners were coming from assembly or lunch breaks. It seemed as if UBY had no sense of urgency. Interestingly when UBY arrived for class earlier than usual they would stand at the back of the line and still became the last ones to enter the classroom. After entering the classroom and as they moved to the back they had a ritual of greeting, instead of handshakes they would pump their clenched fists – they called it *bigging up*. So they *bigged up* each other at the beginning of class since they wouldn't have met some of their peers prior to class as they would be coming from different subject splits. After this ritual they would sit and take out their workbooks and the teacher would commence the lesson. With regards to the time, the life sciences lesson seemed not to be just time for life sciences only. I observed, as alluded to above that within the lesson UBY also took time to catch up with other academic work as well as engaging in catching up conversations with each other. They referred to these sessions as *uploading* or *updating*. Thus, uploading went along as they did their tasks and copied notes from the board and whenever the teachers were not monitoring them or encouraging them to focus on tasks at hand.

When it came to life sciences work, it seemed UBY worked like all the other learners in terms of taking out their notebooks, taking down the notes and attempting to answer the worksheets. However, I made a number of other observations on how they worked. As the teachers did their lesson expositions and would pose questions, UBY were not forthcoming in responding to oral questions even when I could tell that they knew the answer. It seems there was a reluctance to raise hands and answer the posed oral questions. I came to the conclusion that this behaviour was deliberate because when the teachers just picked on some of them whose hands were not raised they would give correct appropriate responses. Other than the absence of this rapport, UBY seemed to prefer to work alone in mono-cultural groups. As observed when Ms Perkins was conducting her practical, the White and Indian learners largely seemed to group in no distinct pattern and tended to work in culturally mixed groups. It seemed there were two reasons UBY did this. Firstly, it seemed to be comfortable for communication because immediately after getting into their groups they reverted to communicating in IsiZulu

as they worked, in which time *uploading* continued. Secondly, it seemed UBY worked slower than other groups so being in a mono-cultural group allowed them to work at their own pace. With regards to task management UBY made an effort to complete their work but usually did so after others had completed the task. The Achilles heel for this way of grouping for UBY seemed to be who was going to present the report backs. None of the UBY was willing to stand and give feedback and the paper with the information would be tossed about until Mrs Moosa or Ms Perkins picked on any one of them to give the feedback.

As UBY worked and grappled with presented tasks I also made a further observation, about their work ethic and task management. UBY task management was different from Indian and White learners. I noticed that both Mrs Moosa and Ms Perkins set tasks and asked learners to work as individuals. During the practical (9th May, 2014), Ms Perkins divided the paper into section A and B with the section A being the hands-on part of the practical and section B was the analytical component of the practical. For the first part learners worked in groups and all showed enthusiasm and co-operated in interpreting the method and executing the practical. After the practical learners had to move back to their usual seats and answer questions in section B. It was during this time that UBY were frantically making efforts to assist each other in answering section B and were even allowing other UBY to copy their work. This phenomenon kept Ms Perkins on her feet and confined her to the last two rows for the remainder of the lesson as she constantly reminded UBY to focus on their own work and desist from sharing information. From the way Ms Perkins was trying to manage this phenomenon, it appeared as if it was an obvious and she was aware of it.

Another observation about UBY interrelations concerned how UBY related to their teachers, amongst themselves and with fellow learners. UBY seemed to have strong bonds among themselves even across genders. The reaction of the UBY in Ms Perkins (24th April, 2014) classroom in defence of his peer when allegations had been made that the absent UBY was bunking during registration affirmed this observation. They tended to stick together, sometimes they came late together, sat together, worked together, laughed at similar jokes and sulked together when the joke was on one of them. When Ms Perkins picked on one of them out of frustration all the other front three rows laughed, while the last two rows remained mum and straight-faced. Other than just explaining how UBY functioned the assumption about relations also exposed how the collective was involved in the operationalisation of power by UBY. Big Show (dialogue, 13th May, 2014) confirmed this artefact as he explained what gave them the strength to rise and fight back. He remarked “I have back-up, all the Black people are

my back up, because us as Black people, we are united". UBY were so united and cared for each other such that their code of existence or motto according to Flambo V was "touch one, touch all" (dialogue, 13th May 2014. Whilst revealing the nature of UBY relations as a source of strength, Top Dog further confirmed this artefact:

Basically I know that, hey, I can count on him. I know he will never let me down or anything (even tell on him). I know that he has got my back. I know if anything had to happen he will be there, that's just how it is (Interview, 2nd September 2014).

UBY were quick to cover for each other or even vouch to be witnesses when incidents happened.

The nature of relations between UBY and their Indian and White peers seemed functional, amicable and mechanical. They seemed to relate and talk when it was necessary and unavoidable, for example, during the practical when UBY needed to clarify Ms Perkins' instructions. However, the relations seemed not to extend beyond the classroom door. When I was analysing documents I developed an understanding of why this relationship was such. From the archives I learnt that when teachers needed witnesses for classroom incidents with UBY they used one of the learners from the front row, usually an Indian or White learner. For example, in Mrs Moosa's class she asked Shazia an Indian female learner to write a supporting report on an incident that had occurred with Cool-Guy, an UBY, during a life sciences lesson. Below is Shazia's report:

Incident Report

Baleka didn't have his day-file, exam pad, homework diary. Mrs Moosa told him to get out a page and write down what we have to do today and what to learn for the control test, Baleka refused to. Mrs Moosa then gave him the report that he has to fill out. While Mrs Moosa was giving it to him, he started laughing in her face. During the lesson he continued to disturb Mrs Moosa. Then he put the report in his bag because Mrs Moosa didn't tell him the time. He was completely disrespecting Mrs Moosa, and ignoring mami's instructions. After that Baleka was loitering around on his desk. Mrs Moosa told me to write it down and starts screaming at him, saying "I've told you how many times that I don't have an exam pad." And then he decides to put his head down and sleep after Mrs Moosa told him at the beginning of the lesson that he's not allowed to sleep in the lesson. Baleka was fidgety the whole lesson.

Gopal Shazia / 15/02/2014
 G.S.

Figure 6.3 Shazia report on Cool-Guy

I also observed a different relational dynamic between UBY and other Black learners. The relationship seemed frosty and almost non-existent. Both physical and conversational contact between UBY and other Black learners was limited. These two groups of Black learners did not interact in the life sciences classroom. UBY also confirmed during co-generative dialoguing that they did not interact with the other Black learners who were not UBY outside the life sciences classroom. I noticed that there seemed to be mutually agreed communication boundaries between these two groups. These boundaries seemed to extend to group activities in class, as I observed that UBY did not mix with the other Black learners. It seemed there was a disdain or loathing of one by the other. Such was the nature of the relations between UBY and other learners in the life sciences classrooms at NHS.

UBY seemed to have a tempestuous relationship with their life sciences teachers. Sometimes the relationship seemed cordial and functional and at other times volatile and confrontational. Ms Perkins confirmed this nature of their relationships during one of my interviews with her when she confirmed that at times she handled them wrongly. In responding to how she could describe her interaction with UBY she remarked:

It varies from day to day. It depends on my mood and theirs. Generally, I get along with all of them and most of them like me, I know, because they come to me. Definitely some of them don't like me, I have handled them wrongly (Interview, 21st May, 2014).

In her story Mrs Moosa also acknowledged this nature of the relationship with UBY which she argued was a challenge and really tested her patience. In the interview Mrs Moosa commented how challenging it was to get through to UBY considering this nature of their relationship which she then dismissed and ascribed to race and UBY not being prepared to accept instruction from a person of another skin tone:

It makes you wonder if it's the same learner here that a couple of minutes ago was back-chatting you, ignoring you and insolence and then a few minutes you find them with a Black educator and are a totally changed learner. You know, it makes you think what did you do differently? It's not like you were arguing with him or it wasn't like you were demoralising him or something, you know. And this is the way that he was treating you. It makes you wonder if it's the race thing, you know (Interview, 25th April, 2014).

The last artefact I observed about UBY in life sciences classrooms at NHS concerned their academics. UBY were performing well below their Black, White, Indian and Coloured peers. The performance trends in the life sciences reflected those I captured in the National Senior Certificate (NSC) results for Northlea in chapter one. Below I present assessment grids for Mrs Moosa and Ms Perkins' grade eleven life sciences up to the third school term of 2014.

In the graphs I included the marks of the ten UBY who were part of the co-generative dialogues. I have not included all learners in both classes, as it was my view that this partial presentation would suffice in confirming this artefact whilst focusing on the organisation I sought to understand.

GRADE 11 LIFE SCIENCES MARKSHEET 2014													MRS R.MOOSA							
NAME OF SCHOOL: NORTHLEA HIGH SCHOOL													GRADE: 11.1							
COMPONENT		Term 1			Term 2			Term 3		Term 4		TOT	Con	PRAC	Con	NOV	NOV	Con	FINAL	
NO	SURNAME, INITIAL	Prac	Mar	Prac	Test	June	Prac	Sept	Proj	Test	Tot	Tot	EXAM	Tot	P1	P2	TOTAL	Tot	TOTAL	
		40	50	40	50	150	40	50	100	50	570	25	60	15	150	150	300	60	100	
4	GWALA LOYISO -TOP DOG	11	5	12	4	18	1	8												
5	KHIKINE BALEKA COOL GUY	19	7	8	0	28	6	8,5												
7	MBELE SINAKHO - SHY-GIRL	15	6	27	14	39	13	4												
8	MLABA VUKANI- FLAMBO V	7	16	12	17	43	14	9												
11	MSELEKU LWANDISWA-CHEEKY-LWA	16	13	31	18	24	9	9												
EDUCATOR: _____		PRINCIPAL: _____																		

GRADE 11 LIFE SCIENCES MARKSHEET 2014													L. A. PERKINS							
NAME OF SCHOOL: NORTHLEA HIGH SCHOOL													GRADE: 11.3							
COMPONENT		Term 1			Term 2			Term 3		Term 4		TOT	Con	PRAC	Con	NOV	NOV	NOV	Con	FINAL
NO	SURNAME, INITIAL	Prac	Mar	Prac	Test	June	Prac	Sept	Proj	Test	Tot	Tot	EXAM	Tot	P1	P2	TOTAL	Tot	TOTAL	
		40	50	40	50	150	40	50	100	50	570	25	60	15	150	150	300	60	100	
8	MAFA SABELO - BIG-MAN	10	3	13	13	30	9	5,0												
9	MBEJE MZOMU NAUGHTY-BY-NATURE	11	13	25	24	49	29	19,0												
18	SHELEMBE MNELISI - MAGIC	10	11	22	17	36	11	19,0												
19	SHOZI SHAWN - BIG SHO	4	13	11	17	26	9	13,0												
20	TWALA LUNGI - JUST-LUNGISANI	11	16	21	14	51	12	18,0												
EDUCATOR: _____		SCHOOL STAMP: _____																		
PRINCIPAL: _____																				

Figure 6.4 Part of continuous assessment grids for Mrs Moosa and Ms Perkins' classes

What was apparent from the continuous assessment marks in both classes was that UBY were experiencing academic difficulties. Not only were UBY failing but also exhibited a propensity of missing some of their assessments. Thus, their failure at the end of the term seemed to be from outright failure to cope with assessment tasks as well as not writing the assessments which perhaps could have arisen from neglect of their work or deliberate avoidance of assessments. However, regardless of the rationale grade eleven UBY were not performing well in life sciences at NHS.

The artefacts highlighted above were ones I deemed crucial in this focused ethnography. There were other enactments that UBY exhibited like their hairstyles or the music played on their phones which were also shared by their peers from other cultural groups. Such artefacts I did not consider as crucial in understanding the phenomenon that was unfolding in the grade

eleven life sciences classrooms at NHS. In this focused ethnography I regarded such artefacts as generic, hence had no utility in understanding the specific organisation.

From the artefacts I obtained first-hand experience of what my colleagues had brought to my attention. Through artefacts I presented UBY surface level of culture (Schein, 2004). Within this analytical understanding I captured and presented what I saw, heard, read and was told about UBY in life sciences classrooms at NHS. Even though interpretations could not be drawn at this level, the captured artefacts encapsulated the manifest attributes of UBYC. Two key findings from the UBY artefacts, other the artefacts themselves were, firstly, the realisation that UBY were knowledgeable and agentic. What I picked from the artefacts was that UBY had their shared knowledge system that informed their own unique ways of enacting in the life sciences classrooms that distinguished them from their peers. This knowledge system was communally held by those in the group and dictated what they did and the timing of enactments. Secondly, this study established consistency in the nature and patterns of enacting. Other than confirming an inherent stable knowledge system, this finding pointed to the possibility of functional organisation within UBY. The predictability of their enactments affirmed deliberate structuration that uniquely constituted their enactments as a manifestation of their being.

It is important to acknowledge that some artefacts exhibited by UBY in life sciences classrooms at NHS are not unique to this context. Vandeyar and Killen (2006) observed similar seating patterns as those at NHS. However, in their study teachers created this arrangement whereas at NHS the learners chose where they wanted to sit. Due to the seating arrangements in their study being structured by the teachers, the scholars interpreted their findings in the context of race, as race “hierarchisation” (Vandeyar & Killen, 2006, p. 391). Findings in life sciences classrooms at NHS on this aspect transcended the premise of race and suggested a cultural dimension to the seating arrangement. The presence of some Black learners at the front and some White, Indian and Coloured learners in rows other than at the front hinted at another dimension to the phenomenon, which I interpreted as cultural difference or the holding of different basic tacit assumptions (Schein, 2004). It became my interpretation that learners chose their seats deliberately based on some deeper symbolism attached to the seat. The research endeavour through dialoguing was then to establish why they chose to sit at the back.

Other artefacts of UBYC in life sciences classrooms at NHS noted in South African classrooms include: disrespect towards teachers (Marais and Meier, 2010); absenteeism from school, confrontations with teachers and poor academic performance (Rossouw, 2003). Unique

artefacts identified for UBY in this study included bunking or missing classes, frosty relations with peers, diminished work ethic, non-participation or non-involvement in classwork, tardiness, cliquing and disengagement. Whilst in other studies researchers ascribed disruptive enactments of learners to teachers ((Mabeba & Prinsloo, 2000; Marais & Meier, 2010; Moloji, 2002; Rossouw, 2003), this study diverged from such as I sought the cultural significance of the artefactual enactments. In the cited scholarly work emphasis is placed on the inhibition of school effectiveness inherent in learner enactments. What eludes this research work is firstly, the focus on distinct learner groups, like UBY and their contribution to “ill-disciplined behaviour” (Rossouw, 2003). Secondly, the research studies focused on overt disruptive enactments whilst this study managed to capture both overt as well covert UBY enactments in classrooms. On the latter aspect, scholarly work cited above focused on enactments that concerned teachers raised as directly impacting their teaching. Of significance from this study was the finding that learners like UBY also enact in subtle and unobtrusive ways which may even be accepted as normal. In terms of subtlety and normalisation, such artefacts included UBY relational artefacts, and non-participation or sitting at the back without interfering with the lesson, *uploading* whilst doing classwork. The significance of this finding was that it broadened the scope of the attributes that militate against curriculum realisation beyond the context of teachers being able to teach and what is conceptualised as ill-discipline.

The other fundamental finding from the artefacts was how inconsistent they were with UBY espoused values. What emerged from the artefacts was that UBY acted in ways that were inconsistent with what they professed as their ideal. Whilst UBY professed to value being ambitious and a bright future, they exhibited a poor work ethic. Whilst they espoused that academics were an indispensable facet of their future, they bunked life sciences classes, came late and were arrogant towards the teachers who were there to facilitate the realisation of their espoused value. Whilst UBY valued relationships they maintained distance from their teachers. Whilst they valued their Black identity and professed the unity of all Black people they could not stand fellow Black learners. Whilst UBY espoused capability and competence they were failing and were not making self-benefitting contributions in the life sciences classrooms. The holding of such contradictory cultural attributes was an important finding for this study. This finding pointed to something deeper which needed to be explored, particularly how UBY resolved such contradictions. From this finding the deciphering of UBY basic assumptions emanated. The essence of the deciphering process was to make sense and explain these contradictions. Within Schein's (2004) framework this process involves interpretive analyses

that generate basic assumptions. In the next section I present UBY basic tacit assumptions which I interpreted could explain what I had witnessed in my encounters with them in this context.

6.5 UBY ASSUMPTIONS IN LIFE SCIENCES CLASSROOMS

In the following sections of this chapter UBY basic tacit assumptions will be presented. Deciphering UBY assumptions implied addressing the second research question; what is the nature of urban Black youth culture (UBYC) as observed in life sciences at NHS? The nature of UBYC in grade eleven life sciences classes at NHS was analysed using Schein's (2004) model in terms of basic tacit and deeper abstract assumptions.

The data for deciphering UBYC and its description in this section came from the seven co-generative dialogues I held with ten purposefully selected UBY. As already alluded to in chapter four, seven dialogues were held because by the seventh dialogue data saturation according to Fusch and Ness (2015) had been reached. Ten UBY participated in the dialogues because Groenwald (2004) regards this an ideal number to reach saturation. Data generated from the co-generative dialogues was augmented by an extensive unstructured interview with Top Dog, who from the dialogues, came across as being at the top of the *food chain* and was therefore more disposed to the nature and functioning of UBYC. In the following sections I present these basic assumptions. I arranged these assumptions thematically into the following, that is, assumptions about their identity; power; relations; life in the life sciences classrooms and at NHS; life sciences (as a discipline) and life sciences teachers; success and other deeper abstract assumptions. These themes came from the coding labels I used during data analyses.

As alluded to in chapter five, basic assumptions arise as a solution to contextual challenges of external adaptation and internal integration. In coming up with the UBY basic assumptions below I had to place their espoused values in the context generated by their teachers (chapter five). When I superimposed their espoused values in this context I deciphered assumptions which helped explain UBY artefacts in the life sciences classroom.

6.5.1 UBY basic assumptions about their social identity

In chapter five, findings were that the context structured by life sciences teachers as informed by their assumptions of a superior social identity was one which valued euro-centrism and created cultural hierarchies. This context othered all who were not euro-centric enough to be identified as normal. It is in this context that UBY found themselves in. From UBY espoused

values, UBY valued their being and were comfortable in their skin and way of doing things. The challenge in life sciences classrooms for UBY became how to remain urban and Black in a context that valued euro-centrism. It was in the context of this dilemma that UBY made the following remarks about themselves:

we are URBAN, we are different...Being Black and in an urban area, I think the difference between us and other underprivileged Black kids is that we have more opportunities to explore the world and they don't have all those opportunities. Let's put it this way, we are different, we live in different worlds and everything is so different (Top Dog, Dialogue, 12th May, 2014).

UBY described the many ways they were different and privileged by virtue of being urban. In the same dialogue, Big Sho remarked, "We have an upper hand over Black kids in rural areas. We don't have to walk long distances; we don't have to walk to school. We have a lot of privileges". Such privileges according to Flambo V entailed "Recreation, more recreation, we have more opportunities for recreation, we can go to malls, clubs and the infrastructure is different; we have better services, better health care". Another dimension of privilege according to Magic was "we are exposed to the internet, cellphones, to communicate with other people not like them whose house is here and their neighbor is 20 kilometers away. We have that privilege" (Dialogue, 12th May, 2014). In the same dialogue Shy-Girl brought up the language / accent aspect "I'm different from a girl from the rural areas from the way I speak, when I go to *emakhaya* (rural home) they get lost, they are confused from the way I speak". Weighing in on their language competence Top Dog posited:

They really don't understand English. So what's the point of listening to songs you don't even understand? Because the kids from rural areas hardly know, they cannot speak English...and also the vocabulary and stuff like that, somebody from the rural area, speech sounds different from us. The accent from the rural area and urban area, it just stands out, that's one of the things that stand out as well (Dialogue 12th May, 2014).

Encapsulating UBY privilege and affirming themselves as better than their rural peers, Just-Lungi claimed that UBY had "swag" (UBY colloquial for class) because they dressed different, had all the urban niceties and "they listen to *maskandi* (traditional Zulu music) and we listen to RnB (Rhythm and Blues), house and rap".

UBY attributed their privilege to their parents. According to Just-Lungi "our parents always say, you see me, when I was in school, I would walk 5 kilometers...but you, I always give you money and you still don't appreciate all that. I blame our parents for this privilege". On being asked if they wished if they were not as privileged, Big-Man responded:

Yes, I do (like life to have been a bit difficult). For our parents, they had a tough life and worked hard for everything, but me I have everything...now I just need to wake up and say mom I need this kind of money, whilst some people are struggling (Dialogue, 12th May, 2014).

During this first dialogue (12th May, 2014) what emerged was that UBY regarded themselves as socio-economically privileged. However, despite seeing them as underprivileged UBY empathised with their rural peers especially their lack of opportunities to explore the world, as they did, as remarked by Flambo V “I don’t know how it happens, I feel bad for my people. I empathise with them. So whilst taking a bath you say, hot water eish, and you think about them having a cold bath.”

Other than the socio-economic attributes, UBY also spoke about their political *self*. “There in the rural areas they have rights but they don’t know much about them” (Flambo V, Dialogue, 12th May, 2014). According to Just-Lungi, as UBY “we fight for our rights... we take advantage of everything...but in rural areas they just get beat up and just let things go”. With regards to their rights UBY claimed that their understanding was “very high and we tend to use it as an advantage. The guys in the rural areas know them, but they know a certain amount” (Big Sho, Dialogue, 12th May, 2014). Commenting on how this knowledge was an advantage Top Dog posited:

Here if they (teachers) hit us, we will fight back, straight up, that’s how it is. We guys, we fight back, and we will lose our own cool and fight you. But in the rural areas, they hit us, we will go home and sleep, like *Bangitshaya eskoleni* (they’ve beaten me at school) (Dialogue, 12th May, 2014).

What I could glean from these statements was that UBY regarded themselves as politically conscious and their consciousness transcended that of their rural peers. Due to this variation in political consciousness UBY placed themselves at a higher pedestal than their rural peers and by regarding themselves as better beings.

In an attempt at reconciling the artefacts, UBY remarks above and their espoused value of the *self* and the euro-centric context structured by their teachers, I managed to decipher one of UBY’s basic tacit assumption. The basic tacit assumption I deciphered was that grade eleven life sciences UBY at NHS held and operated with a superior social identity. Within Schein’s analytical framework the espoused value of the valuing of their being had metamorphosed into the assumption of a superior social identity associated with notions of privilege and advantage. What was striking about UBY assumption of a superior social identity was that it was relative to their rural peers and not their urban peers. The suggestion hinted in the relative nature of this assumption is that it pointed to its utility in this context. According to Schein (2004) basic

assumptions are tacit solutions to contextual challenges. The question then became: what challenge was this assumption addressing? UBY espoused a high valuing of the *self*, and the euro-centric nature of the context was a threat to their *self*. To circumvent this threat UBY held on to their espoused value, perhaps due to failure or reluctance to yield to euro-centrism. Prolonged espousal of their *self* by UBY resulted in the translation of this value into a tacit assumption. The utility of this assumption seemed to be in the currency it provided for UBY to remain autonomous in a context in which their being was not valued or was considered a liability.

However, it is important to note that a superior social identity is not an isolated concept, but rather a binary one. Just like the Black and white binary, UBY had to normalise their superior social identity through a pathologisation of something or somebody. To normalise their superior social identity, UBY cast their rural peers as the undesirable other, an aspect which rationalised their assumption and sedimented it. Thus, UBY held and functioned with a superior social identity in any context, even in life sciences at NHS. Even in the absence of rural peers in situ the stability of this assumption sustained and maintained their survival as autonomous beings. However, it is important to note that the superior social identity had no utility in itself as it seemed fictive. From intrinsic motivation as a conceptual frame it seemed UBY through this fictive superior social identity safeguarded their autonomy as well their sense of competence from failing to attain the levels of euro-centrism demanded by the context.

The aspect of UBY superior social identity being fictive came up as UBY discussed their Blackness. On what Blackness meant for them UBY responded:

I see being Black as being just a privilege, it's being different from other races. It's like from a long history, a period in which we were fighting and we are still fighting. We are still coming up...we are fighting...Yeah to be there on top! Still fighting for freedom it's not over yet. (Racism is still an issue in SA), so it's still alive. We want to be on top of the food chain. Being Black is a privilege because they are scared of us. They respect us, that's just how it is. They respect and are afraid of us. So they respect and are afraid at the same time. That's how I see it (Top Dog, Dialogue, 12th May, 2014).

Even though Top Dog expressed the notion of privilege, his rationalisation ceased to be on superior social identity but on a qualitative non-substantive variable race and tenacious engagement in the struggle against the very variable that purported privilege was premised. It was ironic that despite having espoused a positive self-image and holding assumptions of a superior social identity, UBY still had to “fight and were coming up” (Top Dog, Dialogue, 12th May, 2014). The fact that UBY had not arrived at what they espoused and dreamt of made their

assumption of a superior social identity fictive. UBY were pursuing a social utopia which would render them genuine superior social identity. The fact that they longed to be there affirmed the fictive nature of their superior social identity. An important aspect that emerged from Top Dog's remarks is that UBY were of the notion that being at the apex of the food chain, would earn them respect. Thus what UBY longed for and were struggling to attain was respect. It was my interpretive conclusion that the basic assumption of a superior social identity filled this void, even though it was fictive. The fictive nature of UBY superior social identity was also confirmed by Big Sho, as he lamented:

It's not easy being Black because we are taken advantage of. It's like in the morning on my way to school I saw 10-20 guys (Black) and they were waiting for a White person to come and pick them up, for cheap labour... and that's why I say it's not easy, because people would like to take advantage of Black people (Dialogue, 12th May, 2014).

Further confirming this positioning and the fictive nature of their superior social identity, Big Man posited:

It's not easy being Black. You have to work for everything, you wanna have and believe in. You can't just get it from anyone. You must work hard because us being Black we don't have big opportunities like other races (Dialogue, 12th May, 2014).

Bringing a historical perspective to this positioning, Naughty-By-Nature remarked:

It's like back in the days Black people were not like given proper education. Our parents really like didn't have what White people had. White people had a lot of money and White people of our age inherit money and we don't have stuff like what the other guy has (Dialogue, 12th May, 2014).

The common strand in all these UBY remarks was that UBY equated being Black to constant struggle, despite professing it to be a privilege. UBY were of the view that life for the Black person, hence for them also, was a fight to get, as well as to maintain. Of what value then was the assumption of a superior social identity? Within Schein's framework I interpreted this assumption to have served as a mechanism for trauma aversion. Having been placed by their parents in a context where their social identities were not validated, through this assumption positioned themselves as equals to those who were euro-centric in the social field of life sciences. Having positioned themselves as equals with those who were culturally predisposed, UBY maintained their voice and autonomy in the face of cultural adversity. It was within the ambits of this assumption that they registered their willingness to soldier on and fight as articulated by Magic, "it's time to show other races that we can do it as Black people..." (Dialogue, 12th May, 2014). So strongly held was the assumption that UBY relished their struggles and seemed to gloat about their invincibility and lauded the possibility of being

victorious. They cherished and revelled in the thought that they were more resilient than any other race group. According to Top Dog:

For the fact that we are still on our feet, that really kills it all. Any other race group that would deal with what we are going through will be on the ground, DEAD. I'm just like, we are strong, we Black, we Black (all UBY clapped in confirmation) (Dialogue, 12th May, 2014).

At a deeper level this assumption pointed to more abstract assumptions. The fact that UBY had a historical reference to their agency pointed to their time orientation. UBY comments and responses indicated that they were operating within a continuum of the past and the present with their thinking being influenced by how things used to be as they grappled and worried about their present circumstances. Their past orientation explained their heroes and role models. Most critical was that as their country came from a confrontational history their past orientation also explained their confrontational approach and fighting spirit. The past for UBY normalised the present in simple enactments like their seating positions in class as pointed by Just-Lungi whilst explaining why UBY sat at the back: "I think we are accustomed to sit at the back it has become normal. Sitting at the front just doesn't feel right, people before us were sitting at the back, Black people before us sat at the back" (Dialogue, 16th May 2014).

The way UBY spoke about the past experiences of Black people under apartheid also demonstrated another deeper and more abstract assumption about UBY identity, that of their reality and truth. For UBY the assumption for reality and truth was historical and therefore based on the opinions of those considered wise and experienced which included people like Top Dog, parents and role models. Thus, the experiences and pronouncements from these individuals were held as valid. They were not just blindly accepted but they were shared and talked about until everyone accepted them. At this point of universal acceptance, the once individualised reality becomes a shared social reality which constituted the truth for the group and needed no empirical external validation by those outside the group.

The persistence of the assumption of a superior social identity, by virtue of its fictive nature needed to be hedged and safeguarded by more stable internally validated basic assumption. As I sought for such, I deciphered the next UBY basic assumption.

6.5.2 UBY ASSUMPTIONS ABOUT POWER

From their narratives UBY espoused independence, capability and self-determination and in the life sciences classrooms, observations were that UBY enacted as they pleased. They were tardy, truant and confrontational towards their life sciences teachers. They did not

conform to the dictates of NHS and the classroom rules that governed classroom conduct. Other than observed artefacts, UBY cast themselves in the following manner as they talked about Mr Ogden, the Deputy Principal:

He thinks he came to change us to something he wants. We follow the school rules and code of conduct, but he brings his own things. I don't know how? The other time I was caught, in the code of conduct it was a level three offence, but when I was sent for a tribunal, they said there was something amiss and I called Mr Xaba, and he answered that question for me. He (Mr Ogden) was trying to push me out of school, so that I don't come back (after suspension), but he couldn't win, because I am BIG-MAN...I don't like him because he thinks he is the man. He thinks he knows everything, but he doesn't know. Many things he doesn't know and he needs to know them. And when the time comes, he will find out, but I will be long gone. He doesn't respect us... (Dialogue, 13th May, 2014).

Weighing in on the same issue, Just-Lungi commented "he thinks he owns the school and everything belongs to him basically. It's his way or no way. He underestimates us" (Dialogue, 13th May, 2014". Whilst pointing out mistakes that teachers make in dealing with UBY, Top Dog posited:

The mistake that teachers make is to try to bring UBY down and make them 'cheap'. When you do that it never ends it's a long process because you will fight the whole year with that person. The whole long year, with that person, and while you are fighting him, he will influence someone else to act just like him and that person the next person and it will keep going down until there are too many of them. That's a virus, a deadly virus (Interview, 2nd September, 2014).

Placing these remarks, UBY espoused values and artefacts in the context created by their teachers their second basic assumption emerged. The context, as structured by NHS and their teachers demanded absolute compliance with power structured and presented in ways that left nobody in doubt of who was in charge. At the macro-level it was Mr Xaba and Mr Ogden and at the micro-level, in the life sciences classrooms it was Ms Perkins and Mrs Moosa. On what premise then were UBY claiming space in this power structure to the extent of claiming underestimation, invincibility and waging a prolonged fight with embodiments of power at NHS? In trying to explain UBY claims of agency and the capacity to self-determine, I deciphered that UBY held the assumption that they had power. The understanding of power invoked here being the capacity to choose and act as they saw fit. Through this assumption about power as captured in the remarks above, UBY laid claims to space in the social field (NHS and life sciences classrooms). This assumption of power also allowed UBY to place themselves at the same level with those in authority and as such demanded due recognition from them. Through this assumption about their power UBY could talk disparagingly about authority figures as they regarded them as equals if not below them because they did not have knowledge to understand UBY. Holding and functioning with this assumption, UBY believed

they co-owned NHS with senior management. They saw their influence superseding that of their teachers as they virulently influenced other learners to be like them. Thus, this assumption of having power governed UBY lives and its operationalisation allowed UBY to be on the offensive or defensive and constructive and destructive depending on how they adjudged the context in terms of their agenda.

During the third focus group (13th May, 2014), UBY made some statements that affirmed this assumption and from which I also identified the various ways in which this power was operationalised. During this dialogue Big-Sho posited:

In high school, I try like everybody else to be friends with teachers, but it doesn't work. I'm stubborn, it's the way I am. If I wanna listen to you, I will listen to you, if I don't want to listen to you, I don't. That's just the way I am (Dialogue, 13th May, 2014).

On who he was prepared to listen to, Big-Sho remarked:

It's like a teacher that respects me and I respect them back. And if I show respect and the teacher goes like, stuff you, I don't respect you, I'm the teacher I will do whatever I want to do. He can't do that after I have been nice to him... (Dialogue, 13th May, 2014).

The implication of Big-Sho's remarks seemed to be that UBY had the power to choose to engage and who to engage with and the quality of the engagement. For UBY to engage they demanded "respect", which implied recognition that they were agentic. UBY were not prepared to productively engage (being nice) with those who did not acknowledge (stuff you) or underestimated their agency. Based on holding the assumption of having power, choosing not to engage was not a liability even when UBY were labelled stubborn. The notion in the statement "it's the way I am...that's just the way I am" and "he can't do that" seemed to be UBY unpreparedness to relinquish their power and to conform and comply to what the teachers dictated at whatever cost, even if it meant being closer to the teacher in order to enhance their learning opportunities. The cultural significance of this dimension of UBY basic assumption about power was that UBY were prepared to sacrifice their education to preserve their power. The latter aspect was posited by Flambo V in the same dialogue when asked what UBY did when they realised they were wrong, "you can't own up, you are Black, you are stubborn (*have power*), you are always gonna be right, you don't own up, especially to a White person. You mustn't own up. It's like that". From his remarks Flambo V reaffirmed the undesirability of owning up or giving in because it implied the capitulation of power and losing their niche in power discourse of NHS and life sciences classrooms. The remark "especially to a White person" brought up the influence of historicity in UBY socio-political identity as justification

for their enactments as posited by Magic “they did it to us and in this school here we wanna show it to them, that we are capable of doing it too. It's our time” (Dialogue, 12th May 2014). Thus, as UBY saw Mr Ogden, Ms Perkins and Mrs Moosa they were not just their teachers but WHITE teachers and as such seemed to regard them as symbols of the subjugation of the Black collective in the past. Believing that they were now free and holding the assumption that they had power UBY were not prepared to own up to their white teachers because for UBY such an enactment was a reincarnation of vassallation and subservience, something that could not be associated with the powerful UBY. Deciphering this assumption and the multiple dimensions of its operationalisation helped me understand the puzzling phenomena of arrogance, defiance, stubbornness, reluctance to comply and at times the tendency to conform and enact in productive ways which enhanced UBY learning opportunities which I had observed during data collection.

Other than the capacity to choose, UBY assumptions about power enabled them to affirm their autonomy through enactments of self-preservation. Unprepared to conform UBY regarded overtures to force them to comply as provocation and it was in this context that Magic commented, “If you provoke me and now I have the strength to do it to you, I will do it” (Dialogue, 13th May, 2014). So powerful did they assume themselves to be, that Big Man claimed that they were running the school, “you know how the school is run, we run the school our way and you run the school your way, that’s true” (Dialogue, 13th May, 2014). Magic attributed this ability to the political freedom that came with the new political dispensation as he remarked “now we are free” (Dialogue, 13th May, 2014). The common notion that was emerging from UBY remarks was that this assumption rendered to them a sense of independence or autonomy to chart their destiny even at NHS. This belief in having the power was later on affirmed by Top Dog in our interview when he categorically stated, “it’s that attention, it's wanting to be that person that everyone speaks about, You wanna have that certain amount respect; you wanna be 'different' from everyone basically you wanna be the '**principal**' in a way” (Interview, 2nd September, 2014). In desiring to be different UBY expressed their valuing of their autonomy and in wanting to be like Mr Xaba (principal), UBY expressed the space to self-determine and the freedom to be who they wanted to be. The desire for the triad of autonomy, self-determination and freedom explained the futility of Ms Perkins’ approach in trying to bring Big Sho down and the continuation of the fallout between them. It also explained why her one-on-one session after the public spectacle was fruitless because according to Big Sho she had compromised his power and as such battle lines had been drawn. I then

understood why disciplinary measures implemented by Mr Ogden and Mr Brown as they came to Ms Perkins and Mrs Moosa's side were fruitless. For UBY disciplinary measures instituted by the quartet were punitive measures against expressions of the autonomy, agency and competence. Thus, UBY were being punished for who they were, and they resented the four.

Another way that UBY operationalised their power, which also led me to decipher their assumption about power was inferred from Big-Sho' comment:

Well, I'm Black, I find it easy in this school, I wouldn't lie...I find it easy, not because I'm stubborn but I know how to manipulate people, that's the thing. I'm quiet smart, I'm very smart because I know how to manipulate people. I can't share how I do that, it's my secret (Dialogue, 13th May, 2014).

Even though Big-Sho did not want to divulge the secret other UBY were forthcoming on how UBY operationalised their assumptions about power through manipulation. According to Just-Lungi "sometimes we do wrong to prove a point" (Dialogue, 13th May, 2014). In the same dialogue Magic gave an example, "sometimes we come late on purpose, we as Black people (UBY) come late on purpose. Because we are *cool* (have power) and teacher will try to discipline us and we give them attitude". What was significant in these remarks was that UBY were fully aware of their power; used this power to go offensively at their teachers and they did this in ways that limited their learning opportunities. Thus, manipulative enactments based on UBY assumptions about power made the teaching and learning vulnerable to UBY temperament. This dimension of UBY assumption about power explained the temperament swing that Ms Perkins referred to as a having a good day and then a bad one with UBY in her classroom. UBY believed that they had the power to cast themselves in any role according to how they perceived their circumstances.

During the third dialogue (13th May, 2014) UBY also brought to the surface another operationalisation of power that confirmed their assumptions about power. During this dialogue I asked UBY why they thought teachers treated them differently as they were alluding to. In response the following exchange took place:

Magic: Favouritism.

Cheeky-Lwa: No it's not favouritism, it's the way you act. It's the way you behave. These are all notorious kids...All of us sitting here are notorious.

I then asked them if they had been born notorious, to which they responded with an emphatic no! In the following remarks by Big-Sho and Big-Man UBY notoriety was exposed.

Big-Sho: We made ourselves notorious.

Big-Man: No we were not born notorious, we made ourselves notorious. You know what happens in this school, you know how this school is run.

What emerged from this brief UBY exchange about notoriety was that, informed by their assumption about power UBY constructed and reconstructed their identities. Through enactments premised on their assumptions about power UBY became who they wanted to be when and as they pleased. This power to cast themselves in any role was also confirmed by Top Dog. When asked if there was a chance of UBY focusing on their academics and making positive contribution to NHS, Top Dog responded:

Yeah, they will still fear me (other learners), but the impact will be positive, but they will still fear me. That's why I'm saying that we can just control the kids in this school. They will just fear us. We could be right there in front of the whole school singing in the school choir...The only thing that will change is that they will actually feel free to talk to you. They won't be afraid to talk to you because they will be like, hey this guy has a soft-side, he is singing in the school choir, oh let's go up to him. But when we are sitting out there you don't come and say words to us because you don't know what we might say or do. You then just think that, hey it's just trouble. So I think we can make a positive change. That's just what I honestly think (Interview, 2nd September, 2014).

The ability of UBY to voluntarily transition from notoriety to model learners as insinuated by Top Dog reaffirmed my interpretation that UBY had assumptions about power and in this case basing on this assumption they metamorphosed into any role that was expedient and had currency in the context. I named this ability with regards to UBY, the power of caricature. Through this power UBY had the dynamic ability to construct and reconstruct themselves in into what their *self* was not. Through these falsified self-hoods they tackled and resolved their contextual challenges. It is important to mention that what was caricature was the notoriety and not the power to be notorious. This was a significant aspect of UBY power as it explained what was puzzling about them. UBY by virtue of their power of caricature became unpredictable, culturally elusive and a challenge for their teachers. Confirming this power they professed that they owned up to whoever they pleased, chose who to respect and whose goodwill to reciprocate. Having deciphered this assumption I understood Mrs Moosa's comment that UBY could be nice to some teachers and nasty to another. I also understood the temperament swings that Ms Perkins referred to as having a good day and then a bad one with UBY in her life sciences classroom.

For UBY the power image and being in control were critical. It seemed failure was never an option as it eroded one's power and clout, out of the group as well as among the UBY. There was no room for false steps and to make moves one was not sure would succeed. UBY regarded

themselves as impeccable and any misstep led to ridicule from peers. This power-based belief explained the reluctance of UBY to answer questions in the life sciences classes. This was confirmed by Big Man who posited “we don’t ask (questions in life sciences) because we are afraid to be wrong. Nothing really happens if you are wrong, but if Magic and ‘*abanye laba*’ (the others) are in that class then trouble”. Magic interjected and explained the trouble “we are afraid to ask because if you flop English they will laugh at you. One wrong English word and all hell breaks loose they will laugh at you”. This display of failure was not ridiculed only in that particular class but according to Lungi “they will laugh at you after school, and the next day, next week and next term they will remind you” (dialogue, 16th May, 2014). The assumption of power helped explain their views. A “flop” in English was not merely a linguistic accident but rather a display of weakness hence vulnerability in the struggle to the apex of the food chain. Those at the top of the chain were supposed to be above ridicule and the moment you were laughed at, the enigma would have been compromised. To safeguard their positions in the food chain and keep their shroud of mystery UBY had to keep quiet and as such there was no risk of “flopping”.

Despite the fight to get to the apex of the food chain, UBY, at a deeper level had a low power structural organisation which addressed the basic relationship problems of identity, role, power, influence, needs satisfaction and intimacy and hence fostered internal integration. UBY were a loosely bound collective, hence power distribution was diffuse an aspect which I believed facilitated the spread of UBYC like a virus, as Top Dog described it. Despite power being diffuse and the organisation being a loosely-bound collective, UBYC had a hierarchy with an individual or individuals at the top. The UBY at the top were those who had made more sacrifices and were highly regarded and their names are venerated and glorified amongst the UBY and classified as infamous by the school and teachers. According to Top Dog (dialogue, 13th May 2014) “Notoriety is a way of being on top of the food chain”. Due to UBYC low power-distance index there was little or no inequality between those at the top and everyone else. Top Dog intimated on this power structure as he gave insight into how one was elevated to the top of the food chain amongst UBY:

Basically it’s about what you do...to teachers...you don’t pick yourself and say I wanna be on top. The people (fellow UBY) it’s like they nominate you to be the guy. I see myself at the top, but I don’t know what for. That’s just the honest truth, I don’t know what for...Another person who is at the top is my fellow friend uBig Man I think like everyone else wants to be the ‘top guy’ you know and when the kids hear about, you know, Top Dog did this and did that. Like when the kids hear about the person up there (the food chain) what that person is doing, they see it as being cool (Interview, 2nd September, 2014)

Once elevated to the top, this status was retained as long as the individuals remained in the context even if they started to positively enact they would have earned the status and remained recognised as such. At NHS, according to Top Dog, UBY at the top were more powerful than teachers and held sway over the learners, with the learners in return respecting them more than they respected teachers. Top Dog revealed this power dimension as he related the following incident:

I walked past Mrs Premraj's (another science teacher at NHS) so she was like, hey can you just come take care of my class quickly. And I was like no problem, and so I walked in and the class suddenly got quiet because there were a bunch of kids that actually knew me and they were like '*oh, nangu uTD*' (that's Top Dog) you know and so they kept quiet. The same thing happened with this other teacher when she got me to care of her class, in fact she noticed that and she said the kids are probably afraid of you, so that's why they probably kept quiet. I just laughed it off. So that's why I'm saying in some cases, you know, the classes can be controlled by the guy at the top...Not anyone would actually talk, but Big Man could speak, I spoke, but the rest kept quiet. So basically the people that are at the top of the food chain can, they work with each other. When Shrek keeps the whole class quiet, I'm the one who has the 'right' to speak because I am also right where he is. But we don't disrespect each other publicly. We actually treat each other like 'brothers' that's how it is... once you are at the top, you are just there, there is no way you gonna come down (Interview, 2nd September, 2014).

Within Schein's (2004) analytical framework, the sentiments echoed by Top Dog explained two things about UBY assumptions about power as a solution to the challenge of internal integration. Firstly, it maintained order and stability within the group due to its hierarchical nature. Secondly, its perpetuation was guaranteed by its diffuse nature, the fact that there was always room at the top meant every UBY at any level would be motivated to work to get to the top, an attribute which enabled UBYC to survive and flourish. This explained why every UBY could potentially disrupt the lesson because it was every individual's role to exercise their power as means to relate well with their peers and gain acceptance in the group whilst moving up the food chain. This diffuse nature of power also explained participation structures observed during co-generative dialoguing which were participatory-interactive. UBY speech was highly vocal and animated, the diffuse nature of power provided for any member to interject and speak, through what I regarded as an assertive deployment of the power to speak. Anybody would come into the conversation simply by being louder than the incumbent speaker or just motioned with their hand that they were going to come into the conversation and would proceed to speak without waiting for permission from anyone else. This ritual would continue until everybody was vocalising confirmation in lower tones or just nodding their heads in concurrence which signalled that there was consensus. It was at points like this that our

dialogue would stop or we would decide on what next to discuss. This ritual became clear only after deciphering UBY assumption about power.

When Big-Man said “you know how things are in this school”, UBY assumptions about power became intertwined with the context. Schein (2004) argues that at the end of cultural descriptions challenges being resolved by the basic assumption must be teased out because in this process is cultural understanding. Examination of the context (chapter five) revealed that it was highly restrictive. All learners through appending their signatures on the code of conduct were expected to conform to prescribed precepts. Learner enactments were supposed to conform to prescribed norms and failure to meet these norms was remediated with punitive sanctions. This was the context that UBY found themselves in and were supposed to function in. Such a context unsurprisingly should have been punitive in itself for UBY who valued autonomy, relations and believed were free to explore their agency. UBY had two options to conform and comply or to resist. From observed enactments UBY chose the latter. However, for them to be able to resist, their resistance had to be premised on a stable abstract foundation. Such a foundation emerged from the transformation of their espoused value of capability and autonomy into an assumption of power. Schein’s (1984) success model for culture creation postulates that culture arises from one solution that works, out of a multitude of possibilities. Such a solution is internalised and transforms into a basic assumption. In this case the basic assumption operates on the principles of positive reinforcement in that they are rewarding in themselves. What was emerging as I deciphered this assumption was that through the capacity to choose and act as they pleased, UBY retained their autonomy in a context in which learners were to a lesser degree objectified. Thus, this assumption allowed UBY to be themselves and relieved them of the anxiety associated with trying to be at your best behaviour. In the latter sense UBY assumptions about power involved negative reinforcement. Through this assumption UBY were able to wade off threats to their autonomy and sense of freedom in a context that resembled their historical past. Even though some of the enactments that were premised on this assumption reduced their learning opportunities, UBY believed that through this assumption they were better disposed to fight a system that wanted to subject them to the disadvantage of their collective’s painful past. Thus, though UBY enactments could be construed as retrogressive in the context of teaching and learning as far as they were concerned such enactments were rewarding, hence the choice to be notorious. It was more rewarding for UBY than yielding to the dictates of NHS and even observing the virtue of being honest and

owning up when in the wrong. UBY assumptions about power thus functioned both as solutions for internal integration as well as an adaptive response to the inhibitive of the context.

6.5.3 UBY ASSUMPTIONS ABOUT RELATIONS

From the way UBY sat, collegially engaged in life sciences classrooms and the centrality of relationships presented in their narratives, the importance of relationships for UBY was clear. During dialoguing the centrality of relationships was also articulated. In responding to my question about the source of their strength, Big-Sho responded “I have back-up, all the Black people are my back-up. Because us as Black people we are united”. Continuing with the conversation and affirming this view, Flambo V remarked, “Yes, touch one, touch all”, to which Top Dog added “we are united, we care for each other” (Dialogue, 13th May, 2014). During the same dialogue whilst responding to the question about what bound them, Flambo posited:

The race, our culture and you know, like, I know how it feels when they (NHS and teachers) do this to him (pointing at Top Dog), so we like feel the same thing. It’s like a brotherhood. You can’t really explain it, but it’s there (Flambo V dialogue. 13th May, 2014).

Flambo V’s remarks captured the nature of relations between UBY. They exhibited high levels of consensus and brotherhood as observed in the classrooms and in dialoguing. Their group enactments revealed that UBY were a tightly bound social collective and their grouping a collateral, co-operative one. At a deeper level the collective nature of UBY was not compartmentalised and carried its identity through different contexts. This nature of the self was important because it explained why UBY would bring their experiences with Mr Ogden or Mr Brown into the life sciences classroom and take their experiences in the life sciences onto their field during breaks. The dominance of the group over the individual was such that individuals UBY would sacrifice and were prepared to sacrifice themselves for the greater good of the group. Individuals like Top Dog, Big Man and Naughty-by-Nature were glorified due to the way they stood up to the system. The veneration of this trio amongst UBY occurred against a background of them being perceived as notorious and infamous by those outside UBYC.

At Schein’s (2004) deeper level this assumption implied that UBY viewed human nature as social with primary social needs. This nature of reality for UBY explained the levels of consensus they attained during the dialogues about how they felt and thought about their experiences in life sciences classrooms at NHS. UBY seemed to attain three crucial things from this assumption. Their belonging and being part of UBYC made them feel safe from what they assumed to be an unfair and hostile external environment. Secondly, it met their psycho-social

need of acceptance, respect, intimacy and connectedness. Lastly, this assumption seemed to make UBY feel productive, as each of them strived to make their peers life better at NHS, and in the life sciences classrooms. Whatever they did, they did it for ALL the UBY and thus they regarded it a privilege to have had a chance to serve a ‘brother’. The assumption of the social taking precedence over everything else traversed internal integration and external adaptation issues for grade eleven life sciences learners at NHS. This assumption explained why UBY heroes and favourite people were people they had very close relations with and noticeably their life sciences teachers did not feature on these lists. What then was the essence of such relations if they did not accommodate those (teachers) who were supposed to facilitate their success in school? Interrogating this issue implied getting to the roots of this assumption.

From dialoguing it emerged that UBY *being* for the *others* did not only extend to the immediate group but even to Black youth in rural areas, as expressed by Flambo V as he took the warm shower (Dialogue, 12th May, 2014). During the fifth dialogue (16th May, 2014) as we discussed some observations I had made in life sciences classes, UBY seating came up. I queried why they sat at the back and furthest from the teachers after which I asked them about the Black learners who sat at the front. In response, UBY negatively constructed Black learners who sat at the front. Big-Man referred to them as “those nerds”. For Top Dog it was “those are the guys who are different from us, they think they know everything”. Shy-Girl weighed in “they act smart, but they are not smart”. At this juncture Big-Sho came into the dialogue and tried to qualify smartness “a smart Black person is one who thinks smart, is street smart and are not to ask questions. Those guys (the street smart) have a future and those who sit at the front will end up working for me”. Extending the potential of UBY to make it in life Top Dog contended:

It’s not that they have a future, it’s just that they get good marks. We all have a future, they just get good marks that we don’t get. Not because we can’t, but just because we don’t have the same mindset as them. Their mindset is work, work, work and our mindset has many distractions (Dialogue, 16th May, 2014).

On further probing Magic revealed the real issue between UBY and front row Black learners, after which several issues unravelled. According to Magic, UBY did not get along with these learners because “sometimes they make us look dumb”. Secondly, “they degrade you” (Top Dog). For Shy-Girl “when you like ask questions, they act like they don’t know, when they know”. To make matters worse “even when they know the answers, they will say, they don’t know”. Summarising the reason behind the nature of relationship UBY had with the front row Black learners, Magic posited:

The thing with those Black people in this school is that they don't want all 'darkies' (slang for Black, sometimes used with niggaz by UBY) to be successful, they only want themselves to be successful, it's like that. They would rather work with someone from another race group than another darkie. That's what those guys do. (Dialogue, 16th May, 2014).

In the above statement Magic captured the real issue as well as what exacerbated it. Front-row Black learners were not academically helping their Black brothers, the UBY in life sciences classrooms. This was a violation of the basic assumption that governed UBY relations – everyone was their brothers' keeper. Not only were front row Black learners negating this Ubuntu obligation and were loathed for it, they were also vilified for working better with Coloured, White and Indian learners, which seemed in this case was betrayal of UBY *Ubuntu* or brotherhood. The assumption that UBY held about relationships and their view of front row Blacks explained why mixed groups were not viable in Ms Perkins' practical and Mrs Moosa's idea of trying to use front row Black learners to help UBY were a futile exercise and as it was perceived as derogatory and denigrating by UBY, hence their reluctance to cooperate.

All UBY remarks captured in the preceding paragraph when placed in a context which valued academics over relations served to explain the development of their assumption of relations. The context as structured by their teachers valued academic rigour, measured competency through results and sought exclusively to connect learners to content. This is the challenge that confronted UBY as they entered the life sciences classrooms. To belong in such a context UBY had to demonstrate academic competence by producing excellent life sciences results. UBY results presented in the artefacts (table 6.3) indicate that UBY were not faring well academically. How then did UBY survive and guarantee that their *self* flourished in a context where they were visibly incompetent and confirmed as such? From their remarks, UBY developed the assumption that relations mattered more than academics.

This assumption that the social was more important was crucial in that it was an assumption around which issues of external adaptation and internal integration converged. This assumption governed UBY perceptions, perspectives and even how they felt about their external reality as well as their peers in UBYC and Black people in general as referenced in *ubuntu*. It seemed this assumption was also crucial in the formation of UBYC. The process of UBYC formation was explained by Top Dog after I asked him what brought them together:

We speak about it (their experiences) and when I realise that you understand what I'm saying and you are experiencing the same thing, hey, I say, I have finally found someone who understands me and is actually willing to listen to me and so why not hang around with them... (Interview, 2nd September 2014).

According to Top Dog once UBY had come together they tended to stick together as long as they were in that context due to their continuous sharing of experiences. UBYC formation and maintenance was thus explained in Top Dogs remarks.

With regards to the assumption about relations as having catalysed UBYC formation it can be inferred within Schein's analytical framework that as UBY met, shared their academic challenges UBY became a group. Without this group, within Schein's analytical frame, there wasn't going to be UBYC. As UBY shared their academic vulnerability, the group provided a platform for support and for the evolution of solutions to resolve deep socio-emotional feelings emanating from their failure to produce valued results, hence affirm their competence in this context. Such solutions were meant to counter the label of failure, hence incompetence. From UBY remarks above what I gleaned was that UBY still valued education but trivialised it. Thus, to reconcile their value for school based careers in a context of failure, the assumption arose that relations mattered more than academics. Through holding such an assumption, UBY managed to gather and focus on other "distractions" as alluded to by Top Dog, without dwelling on their incompetence and vulnerability. This assumption also allowed UBY to compensate their vulnerability through trivialisation. Compensatory trivialisation explained UBY youth sentiments of not wanting high marks and succeeding without academic excellence. Lastly, this assumption governed their relationships with their teachers and front-row learners. UBY teachers could not feature on the list of their favourite people or heroes because they were regarded as agents of a system that was casting them as incompetent. Thus, teachers by virtue of having created the context that exposed their vulnerability became a threat to their competence. Also by defining the ideal or the standard against which UBY were supposed to measure up to, teachers were a real threat in further exposing their vulnerability. For these two reasons teachers could not have featured as UBY's favourite people or heroes.

The context created by teachers at NHS was vitiating. It sought to mould or identify and reward the ideal. In this context, front row learners managed to excel whilst UBY were failing. In this way front-row Black learners became the ideal or symbols of Black competence. As a standard for Black competence they became the standard against which UBY were measured and regarded as less than ideal, failures and incompetent. From their remarks it seemed UBY held the notion that without front-row Black learners, they would not have been regarded as dumb or not smart. Thus, UBY resented front-row Black learners not only because the latter were not helping them to cope but because front-row Black learners were more valued than them in this context. To rationalise their resentment, UBY then attributed their challenges to

other “darkies” who were reluctant to help a brother or even identify with them. The valuing of front-row learners in the life sciences classroom ostracised UBY and generated disconnect. The duality of failure and ostracism led UBY “out there” as posited by Top Dog. Being out there left UBY need for connectedness unattended. Thus, the context as structured by their teachers left UBY with two needs unattended, those of competency and connectedness.

UBY assumptions about relations developed to address these needs. With regards to competency the assumption provided a platform on which they could enact competently through other enactments which were not academic. In this regard this assumption fell within Schein’s (1984) social trauma model. The assumption seemed to have been developed to mitigate and alleviate the trauma associated with failing in a context in which academic prowess was valued. To mitigate and alleviate trauma, holding the assumption allowed UBY to evolve ritualistic ways of perceiving, feeling and thinking that allowed them to avoid the anxieties associated with academic failure. With regards to connectedness this assumption allowed UBY to experience their espoused valuing of social relationships. In this regard, this assumption positively reaffirmed UBY cultural identity. In holding UBY together, this assumption was also crucial for internal integration and constituted UBY as an organisation or a cultural entity.

Other than just explaining how UBY functioned, the assumption about relations also exposed how the collective was involved in the operationalisation of power by UBY. As UBY talked about having back-up, and counting on each other whilst upholding codes of secrecy, other relational aspects of their assumptions about relations emerged. Aspects of having each other’s back revealed that UBY relations and their operationalisation of power were based on trust. This explained the herd mentality amongst the UBY and the cliquing that Ms Perkins and Mrs Moosa noticed and why Ms Perkins could not win her class’ favour by attacking Big Sho and disparaging him in front of all. Unintentionally she made him a powerful personality or the clustering nuclei for UBY in her class. Thus, the life sciences teachers’ ‘attacks’ on individual UBY precipitated these bonds of trust to develop as they shared these experiences. The nature of the relations as expounded by Top Dog explained why that Black learner in Ms Perkins class (Observation, 24th April, 2014) stood up for his peer who was absent. The expectation among UBY was that one had to stand up for the other. Due to this cliquing UBY guarded their relations jealously and the group was therefore not easy to penetrate unless one could be trusted.

6.5.4 UBY ASSUMPTIONS ABOUT SUCCESS

During the sixth co-generative dialogue on the 19th of May 2014, we decided to discuss UBY values, interests and relationships. This dialogue was essential for this study because it also served to triangulate UBY narratives, particularly their dreams. During this dialogue I asked them to complete the statement “*I wanna be*” to which they responded:

- Cheeky-Lwa: I wanna be a psychologist. I have to work hard, that’s what I want to be.
- Cool-Guy: I wanna make a name for myself.
- Shy-Girl: I want to fly, but then it won’t work out because of my height. I’m too short to be a pilot, so I am going to be a geologist.
- Flambo V: I wanna be rich. I am going to a veterinarian or farmer.
- Just-Lungi: I just wanna be more like my father (a doctor), persevere a lot and be like him. He is my mentor. He has achieved a lot in life.
- Big-Sho: I wanna be a financial planner and most importantly, I wanna be happy.

What emerged from UBY remarks above as compared to their narratives was a noticeable shift from aspirations and dreams that required academic success. From their narratives I observed that UBY espoused futures of glitz and glamour, high earning professions for which high academic achievement was an imperative. After observing their enactments in the life sciences classroom and reading reports made on them, there was an abyss between what UBY yearned or valued and their academic performance and classroom enactments, an aspect which was confirmed by their remarks above. It was difficult to conclude whether UBY had overstated their ambitions and aspirations in their narratives, or did not know what constituted success or their narratives were genuine but they had reconfigured their dreams at NHS. It was from the need to explore this aspect further that I prompted a dialogue on what constituted success for UBY. To which UBY responded:

It’s achieving what you like. It’s being better than you were in the past. Let’s say you planned being an entrepreneur and you become one, that’s being successful. Once you put your mind and you realise your plans, that’s success (Naughty-By-Nature, Dialogue, 20th May, 2014).

This generic understanding of success by UBY was also confirmed by Flambo V who defined success as “It’s your goal you want to achieve. It’s like a dream and once you overcome (realise) that dream, that success”. From these remarks it was clear for me that UBY had a clear understanding of success as goal fulfilment or the actualisation of aspirations and ambitions. From this notion of UBY I was of the view that what they had stated in their narratives as their dreams was what they really aspired for and to be. Having established the authenticity of their

espoused value and their understanding of success, I then probed what success meant for them at school and in life sciences classrooms. The following exchange then took place:

- Cheeky-Lwa: Success is achieving 50% and above in all your subjects.
- Big-Sho: Success is achieving 60%. It's to achieve 60%, though at times I don't achieve. Success is to finish school.
- Just-Lungi: Success is getting a better degree. That's being successful and 2A's maybe.
- Flambo V: Success is passing all my subjects and getting A's, and leaving school with a name and all teachers knowing that I was a good guy. Such that when I come out of school it will be like here is this cool guy, that's success to me.
- Big-Man: Success is to have a good name, doing great work in school and achieving what you want to achieve, like passing my matric. Success is getting B's and having a good testimonial when you leave school.
- Cool-Guy: Success is learning new things everyday and achieving marks you ought to achieve, like B's, so that I can go to university.

What emerged from this dialoguing was that UBY were fully aware of what constituted success in the school context. They also seemed fully aware of the potential of academic success in actualising their dreams in future. Even though UBY knew that 30% was a pass mark according to the national assessment standards, none wanted to get a mark below 50%, a minimum mark for university entrance. This showed that UBY were fully aware that performing below 50% would limit their life opportunities. Having established that UBY were fully aware of the minimum standards for school success I then probed whether they considered themselves successful. My endeavour in this regard was to understand why UBY enacted in ways that limited their learning, hence life opportunities whilst they espoused values that were nuanced in academic excellence. Responding to my problem UBY posited:

- Naughty: I'm pretty successful in this school because I don't put that much effort in my school and I always pass. That's what I plan to do, just pass. I did not come to school to learn or anything and passing is like getting like a 50%. I always get 50's. I don't put that much in my work because I did not come to school to learn but to pass. So I'm successful.
- Cheeky-Lwa: Success is to get high marks, like 60% and above. I don't aim for 90% because I can't reach those marks. I can only reach 90% in isiZulu. Not that I don't like but because I know even if I work hard I won't get 90%, I know, I won't.
- Big-Sho: It's not that we can't get 90%...we use the word can't but I know we can. The thing is we don't push ourselves. I know we won't get 90%, but I know if I want to get 90% I can, only when I put my mind to it. It's not about being smart, it's about putting your mind to it. For example Indian's study for forty hours, we just study for one hour (Dialogue, 20th May, 2014)

UBY remarks above indicated that they also knew what constituted success in the life sciences classroom and that they were failing to meet the levels of competence venerated by their Indian peers. Aware of their inability to meet the valued standard they reconstructed academic excellence and pegged it at passing, a standard they were most likely to reach. With this lowered standard for determining competency, as they met it, UBY as alluded to by Naughty-By-Nature considered themselves successful. Affirming UBY superior social identity and their assumptions about power in the face of failure, Naughty-By-Nature posited:

It's not that we are lazy, I don't get high marks because I don't like high marks. If I wanted a 90% I would get a 90% because I know myself, I can get anything I want. There is no difference between Magic and Ethan (one of the top learners in the grade), it's only that Ethan puts everything to his work, and if you take Magic and put him in parliament he would do much better than Ethan because Magic like politics. So it's all about putting your mind to it (Dialogue, 20th May, 2014).

The above statement made UBY failure a matter of choice, something which they could change overnight if they decided to. In this statement Naughty-By-Nature brought up the issue of UBY achieving whatever they set their minds to. I then questioned whether they could succeed without education? The following exchange then took place:

- Shy-Girl: Yes, example are soccer players, like Nomvete (prominent soccer player), even Jacob Zuma (the President of the Republic). In fact my heroes are all the successful people who had nothing and did not get an education but are now successful.
- Magic: Jacob Zuma is a very intelligent person. He was in-charge of intelligence of South Africa.
- Cheeky-Lwa: He can't be intelligent because he can't read. He stutters when he reads.
- Big-Sho: Zuma went overseas to study intelligence. Zuma was smart but he didn't go to school when he was still young.
- Big-Man: I think the point is if one has a business mindset, without education they can succeed.
- Magic: Like my mentor, Sir Richard Branson, he did not go to school, but now he is a multi-millionaire... Success is measured by wealth, because Bill Gates is the most successful guy, he is rich.
- Flambo V: Like my uncle and my father. They have these businesses. I look up to them, because they are not educated but they have money. They did not even go up to grade 10, but they are rich.
- Naughty-: Success is getting what you want. I go to the tuck-shop and need to buy chips and I managed to buy them, I am successful. If on my way I get a girlfriend I can say I got a bonus on my way to succeeding. So these guys on their way to success they got money. Success is getting what you want.

- Magic: So, if I was planning to come here and I am here, would you consider that success? You see money is everything and everything is money. You can have 20 degrees and if you don't have money you are nothing.
- Cheeky-Lwa: Money is important because success is measured by wealth and if you don't have money no one will pay attention to your degrees without the wealth to back them up...Just because you are going to school does not mean you are going to be successful (yeah all concurring)
- Big-Man: For me I don't need school. I can drop out today, but I will be successful, I know that, I just need my brains...Basically, school is your foundation, you don't really need school to be successful. School just build's you up, even if you don't finish it you will have the foundation of how life is afterwards...I don't need school to be successful.
- Magic: School is just important in preparing you for how it's like out there after school. It gives you wings to fly when you finish school. Even when you fail, you will be successful, because we do have that knowledge (to succeed in life), even though we don't pass we have that knowledge.

From this dialogue I deciphered UBY assumptions about success. UBY held the assumption that success was materialistic and was not equivalent to educational attainment. In terms of success being materialistic, for UBY the assumption was that as long as an individual had what he needed and wanted they were successful. Not only did these statements confirm the materialistic orientation of UBY but also affirmed their trivialisation of education. Education and schooling were unanimously regarded as not crucial to making it in the world. This confession seemed a contradiction considering some of UBY espoused values and how ambitious UBY were in the artefacts from auto-books. However, this contradiction was dispelled by Magic as he posited that education and being in school was mainly "just a step towards success" (Magic, dialogue, 20th May, 2014). Thus, UBY could afford to sit back and devote only an hour for their success was not intertwined with higher academic accomplishment beyond 50%.

The challenge in deciphering this assumption was the explicit contradiction between their notions of success, irrelevance of education in being successful and their "need" for education in some other career options. For example, how could Naughty-By-Nature not want academic success whilst positing "well I need school, I'm forced to do school in order to do what I want to do (after school) I have to do school" (Dialogue, 20th May, 2014). Further confirming this conflicted UBY posture, Cheeky-Lwa remarked "I do need school, it's a must because if I drop out of school I won't do what I want to do. Without it I won't be able to do what I want to do" (Dialogue, 20th May, 2014). These remarks resonated with their espoused values but were divergent from both their enactments and their pronouncements during dialoguing.

In considering and trying to understand this divergence I deciphered the assumption that for UBY success was materialistic. This assumption accommodated the apparent contradiction of their espoused values, their enactments in the life sciences classrooms and their academic failure. It was in accommodating this irreconcilable triad that this assumption had utility. UBY were failing as observed from their profiled marks and even from their own admission:

We have lost hope (of passing) as it is right now. Some of us as it is we do seven subjects, but in our minds now we are doing six. We don't do biology (life sciences), it doesn't exist right now (Top Dog, Dialogue, 15th May, 2014).

The assumption that UBY held about success allowed them to retain their dreams, enact in ways that limited their chances of success and rationalise their lacklustre academic performance in life sciences at NHS. As I considered the utility of this assumption in the light of Schein's analytical frame my interpretation was that this assumption allowed the contracted posture held by UBY because it had utility in trauma reduction as well as positive reinforcement.

With regards to the trauma reduction UBY, despite espousing success found themselves in a context in which they did not have the cultural capital to transact, hence were failing. They could not cope with the rigours of the discipline, the work ethic expected and were failing. Failing for UBY spelt two things. Firstly, it affirmed and validated the notion of academic incompetence which they seemed aware of from their assumptions about relations. Secondly, failing in the classrooms explicitly confirmed their failure in realising their dreams. To alleviate the trauma and anxiety and therefore the cognitive dissonance emanating from threats of validation of their incompetence and non-achievement of their espoused values, UBY developed this assumption. This assumption allowed them to put up a façade of the insignificance of education or the inconsequential nature of their academic failure. It was in this light that they gloated that they would succeed without school. Through this ritualistic speech they minimised the impact of their unfolding failure and the relegation of their sense of competence to fallacy. As professed by Cheeky-Lwa, UBY also wanted ninety percent hence in isiZulu they aimed for it. In life sciences due to repeated failure such a mark had been elusive and anything above fifty percent was now acceptable. Deep within, all UBY wanted to be like Ethan. To survive the frustration and the trauma of seeing their dreams escape, UBY had to put up a façade. Thus, the façade premised on this assumption had trauma-alleviation utility. How then could UBY survive the apparent evaporation of their dreams? This assumption allowed the displacement and deferment of success into an arena in which they believed they had the

capital to transact. This arena was also beyond the context they were failing in - an aspect which did not allow the evaluation of UBY competency in that context. The impossibility of preemptive evaluation of UBY competence in a futuristic context allowed them to retain a sense of competence, though deferred. In this regard, holding the assumption of success being materialistic and futuristic, allowed UBY to avoid their validation as incompetent in life sciences classrooms at NHS.

With regards to the utility of the assumption that success was materialistic for UBY as positive reinforcement, it is important to recognise its resonance with UBY espoused values. UBY loved and cherished a good life with all the material benefits that came with it. They dreamt of mansions, vaults and having a “name”. Materialism thus served multiple purposes, firstly, it was a continuation of their parents’ legacy, secondly, it affirmed their social identity, hence was a status symbol and lastly, making a “name” was confirmation of power. These three were values that UBY cherished and dreamt about. To sustain this dream, whilst failing, UBY needed a more solid abstraction and such they found in this assumption. Due to positive reinforcement emanating from this assumption UBY enacted in ways that limited their academic success, because they held the notion that their lives could not be determined by a mark. This assumption therefore explained the lackadaisical approach that UBY had towards their work in the life sciences classes. It also explained why threats of dying poor and a hard life after failing school as Mrs Moosa confessed to be using, could not work. Having deeply embraced this assumption and revelling in their parents’ material endowments, UBY entertained the notion that they were going to make it materially in life, despite their immediate academic setbacks. Thus, this assumption spurred them on in a context in which they fared badly.

UBY basic assumptions about success therefore were both a façade for trauma avoidance or alleviation on one hand and on the other a tried solution in the face of the threat of invalidation. However, it is important that in both forms this assumption had utility and thus constituted their jealously guarded cultural being.

6.5.5 UBY ASSUMPTIONS ABOUT LIFE SCIENCES AND TEACHERS

The question that arose after deciphering UBY assumptions about their social identity, power, relations and success, was how were UBY balancing these assumptions in the context of life sciences as a discipline and their life sciences teachers? Addressing this question needed an exploration of how UBY were able to sit in a classroom, learn a subject which they confessed

did not exist, whilst listening to a teacher whose subject they were failing and who did not feature on their list of favourite people? During the fourth dialogue (15th May, 2014), this issue came up and we explored it as UBY life in the life sciences classroom. In the following dialogue excerpts UBY expressed what they thought about life sciences as one of the subjects they were learning at NHS.

- Cool-Guy: Life sciences is very difficult, very difficult concepts, the teacher does not have time to explain properly to you because it's like the teacher is teaching new things everyday. It's very difficult and too much notes and it's difficult to understand because it's too complicated.
- Big-Man And life sciences has too many big words, similar words, but different meanings. I really want to pass life sciences, I'm not going to use it in future but I wanna pass it.
- Top Dog: We will never pass the subject. We just go down the stream God-knows. That subject is hard. I don't know whether it's the teacher, me or the subject. I'm just lost. It's just hard. The majority of our learners in this school and even the matriculants, we all battle with that subject. Like no one here is has made a 50% in life sciences, it's the hardest ever. Life sciences hard, we try so much sometimes but we just don't get through. We need help there is no two ways (no option). We need someone who can explain this like in more detail, you know, like give us your time to explain (Dialogue, 15th May, 2014).

Despite the assumption of a superior social identity and being endowed with power, with the comfort of the collective, and espousing academic success, UBY in grade eleven life sciences classes at NHS regarded the subject as difficult. The difficulty they attributed to multiple factors which included terminology, difficult abstract concepts and pedagogical approaches. On the latter factor, during the same dialogue, I probed them on how they wanted life sciences to be taught and the following were some of UBY responses.

- Cheeky-Lwa: Affirmative action. We need a firm action, someone who will push us because most of the teachers just don't care. Yeah, they don't, I mean you wouldn't care if it wasn't your child.
- Top Dog: I need somebody who is not gonna give up on me. Somebody that's gonna tell you to push. Somebody who is gonna walk that extra mile with you. Explain life sciences, teach it to you.
- Cool-Guy: I need a teacher who motivates us, someone who tells us we are going to pass life sciences. The reason why we fail life sciences is because in our minds we believe life sciences is hard and we gonna fail it. That's why we fail (Dialogue, 15th May 2014).

The common strand in UBY remarks about what they needed to succeed was teacher empathy. UBY felt that if teachers empathised with them and invest more in them their chances of mastering life sciences concepts and eventually passing the subject would be enhanced. From

Cheeky-Lwa's request for affirmative action it seemed UBY felt entitled to much more customised tuition programmes as their academic circumstances were much more dire than those of their other peers. UBY seemed clamouring for some external intervention to extricate them from academic mediocrity in life sciences. During this fourth dialogue, UBY started describing their current teachers:

Magic: That teacher there (Mrs Moosa), when Indians talk she doesn't say anything. When I talk she takes me to the year head. Hau! (exclamation, in isiZulu). So as for me life sciences, too many problems there, so when I go there my mind goes to sleep...maybe that teacher made me not like life sciences because she doesn't teach, she is always on my case, maybe that's why I don't like life sciences. We need like a proper teacher, then I can concentrate (Dialogue, 15th May, 2014).

Naughty-By-Nature:

I have experienced like I wouldn't say racism, but being treated unfairly. I don't know maybe it's because I'm Black. I don't know, but as I explained in the incident that happened with me in class. I was late and was kicked out and the following day I was early and an Indian girl was late, but was let into class, no problem. I then raised the issue with the teacher and she kicked me out. Most of the Black students in this school are treated unfairly. Some call it racism, because I don't believe in that thing anymore...especially in this school. There is no racism (Dialogue, 13th May, 2014).

Big-Sho: My experience has been bad, because I have been going off to sleep. Seriously, I like the teacher who is on point and keeps to what she is teaching and does not drift away from what she is teaching. So this year the teacher (Ms Perkins) I have been sleeping. The teacher is boring and she is telling us about life stories and what happened to her. So it's getting mixed up because she teaches one thing and notes and then tomorrow something else. So we get lost. We are lost (Dialogue, 15th May, 2014).

Top Dog confirmed Naughty's experiences of unfair treatment as he related his own experience and pointed out that UBY were always under the spotlight. He however, trivialised the whole experience and presented it as humorous:

My experience in this school specifically has been big fun. It's because of who I am in this school. It has been fun. The fact is in this school they misunderstand me a lot. They actually like, as you recall the incident that recently happened, just something very small, which got bad, but the Indian guy was left just to walk, but because of who I am in this school, I think more attention was paid towards me (Interview, 2nd September 2014)

It was not only in teachers' actions that UBY felt they were treated differently and unfairly but in word also. UBY felt that their life sciences teachers used cruel words which were hurtful and the fact that they did not use them on White, Indian or Coloured learners affirmed their view of differential treatment. Cool Guy spoke of how Ms Perkins described him, "she said I looked like s***. Well I do accept it because my shirt was hanging out of my

pants but that's not the way to speak to a learner" (dialogue, 13th May 2014). What made it worse for Cool Guy was that when he was taken to Mr Brown he continued to use the derogatory term on him. During the same dialogue Magic brought up his experience in the same regard, "how can you call me a moron? A moron! You don't call your child a moron! It's not a nice word". In confirmation Top Dog intimated:

We are tired of being or feeling misunderstood. Like we are seen as animals basically, that's how we actually feel. We are always the number one suspects, no matter what. You know I had my bag down here by the stands and my friend's he is Indian, his bag was there and Cool Guy's was also there as well. A teacher comes running down...He recognises my bag, he searches and searches, skips the bag of the Indian guy and goes to *skwama sa*Cool Guy (Cool's bag)...So like I mean that's when we ask okay, why us? You should see how much we try. True we have changed, we don't want to be in trouble anymore, but they will keep suspecting us (Interview, 2nd September, 2014).

Top Dog also painted a picture in which the teachers not only treated UBY unfairly but also used negative words with regards to their academic potential:

Yes, they tell you, you are going to fail. The moment they tell you are going to fail, that just kills your confidence. You just tell yourself I'm not gonna study this subject I'm fine, I'm gonna fail it anyway. Why bother even trying when you know you will fail the thing anyway...it doesn't affect us anymore...they have been saying the same thing. We got used to it. If someone is willing to help us we are also willing to put an effort. It's 50-50. If you are willing to help, we are also willing to learn. That's the attitude (Dialogue, 15th May, 2014).

A disconcerting aspect with the use of negative rhetoric was that it was tragically futile but ruthless. It was futile because the life sciences teachers' intention as alluded to by Ms Perkins was to motivate, but for UBY it turned out to be derogatory and demotivating hence not accomplishing the intended effect. For Shy Girl in the same dialogue the teachers' sentiments were both degrading and an outright sentence to failure. UBY remarks at the surface affirmed their view that life sciences was difficult and that their teachers were not competent enough for them, however at a deeper cultural level they seemed to be imbued with other meanings.

From the dialogue and interview excerpts above three issues seemed to characterise UBY life in the life sciences classroom. Firstly, they were not managing the content. Secondly, they felt that their teachers did not care enough. Lastly, they felt they were being treated differently and unfairly. When these three issues are placed in the context in which academic results superseded relations the contextual challenges faced by UBY became apparent. In chapter five the findings were that the context as structured by life sciences teachers cast UBY negatively, an aspect which I described as reconstructed apartheid. In this context teaching was preoccupied with the regimentation of learners in the rigours of the discipline. To accomplish

content mastery, life sciences teachers expected all their learners to sit and listen, write notes and answer posed questions. Life sciences teachers through this context focused on basics only. This approach was meant to achieve two things: complete the syllabus and giving the learners the minimum, expecting that they manage the minimum and produce the valued results. This was the context in which UBY longed to have more time with their teachers and to be given preferential treatment. This was the context in which they were expecting to be made to feel comfortable whilst they were not producing the valued results. This was the context in which they expected their pressed for time teachers to package life sciences more creatively for their motivation. Lastly, this was the context they expected their teachers to treat them more kindly and pamper them in their failure, whilst the latter considered them a liability and a threat to their competency. Examining UBY remarks above, observing their enactments in the life sciences classrooms, trying to reconcile them with their espoused values and juxtaposing them on the context, I managed to decipher UBY basic assumptions with regards to life sciences as a discipline and their life sciences teachers.

With regards to the discipline it seemed UBY operated with the assumption that care mattered more than content. With regards to their life sciences teachers, UBY held the basic assumption that they were treated differently and unfairly. These assumptions explained the nature of the sometimes volatile atmosphere observed in the life sciences classroom; the displays of resentment by UBY towards their life sciences teachers' as well tempestuous nature of the relationship between them and their life sciences teachers. These two assumption seemed to co-influence the teaching and learning of life sciences more directly as compared to other UBY basic assumptions. It was emerging that this assumption was foundational to some of the enactments as UBY felt that the teachers didn't care and treated them differently and unfairly. For example, on sitting at the back Top Dog posited "you will notice teachers also don't bother going back to ask questions, they just point out the dudes in front. So we go like ask them the questions" (Dialogue, 20th May, 2014). Due to holding these two assumption UBY deflected their seating choice and attributed it to life teachers' lack of care and unfairness. Thus, this assumption sustained some negative UBY enactments which militated against their academic achievement in life sciences. These assumptions provided internalised justifications why UBY sat at the back, did not do homework or participate actively in class activities; did not come early for class, engaged in other activities during the life sciences lessons as well as code-switched to IsiZulu in an English medium teaching and learning environment. Such enactments seemed to be rituals from the perception and feelings of being *othered* premised on the above

assumptions. At a deeper cultural level these enactments were trellised on the assumption that care mattered more than content mastery and that UBY were differentially and unfairly treated.

From a pedestal of UBY fictive superiority UBY acknowledged their academic vulnerability and the need for their teachers to reach out more to them. Failure of the life sciences teachers meeting UBY expectations in this regard helped unravel the utility of these assumptions. For UBY being “lost in translation” in life sciences was affirmation of their limited academic prowess, failing to adapt to the teachers pedagogical approaches and not producing marks above fifty-percent, which they espoused in their values (Just-Lungi, Dialogue, 13th May, 2014). Confronted with these challenges UBY developed and taught each other these assumptions. Within Schein’s analytical framework both assumptions fell within the social trauma-alleviation model.

Through the assumption that they were treated differently and unfairly UBY had a cause to cluster and become a cultural entity. The persistence of this assumption had utility in maintaining the group’s internal integration on one hand and providing justification for their own positioning in this context. It was a significant find that UBY did not attribute their perceived differential treatment to racism. According to Naughty-By-Nature UBY were not sure whether what was happening to them was because of their teachers, the subject or of their own making. The significance of this fact was that the development of the assumption could not be solely regarded as externally-induced solution but also an internalised way of seeing which would not necessarily have been valid. The argument here is that in the same context there were other learners who chose to sit at the front, enacted in ways that maximised their learning opportunities and had cultivated amicable relations with their teachers. These observations confirmed the insignificance of race and cast UBY assumptions as premised on their internalised abstractions of contextual challenges in the context of their academic performance. Making this claim at this point does not absolve the teachers of the responsibility in developing better ways to serve all their learners. My argument here is that even though the context was alienating, its alienating was academically orientated. The challenge that UBY had to contend with was therefore academic alienation based on their failure to produce results. Faced with this reality, UBY had to justify their academic underperformance whilst maintaining their sense of competence. UBY managed to maintain their sense of competence and avoided the trauma that came with academic failure in two ways, firstly, through the assumption of being differentially treated they justified their failure as being due to an uneven social field in which they were being denied an equal platform to excel like their peers. Through

justifying their failure on differential treatment UBY positioned themselves as victims of the system. Such a positioning drew sympathy from others who were like them and the group grew. Having politicised their failure UBY managed to maintain a false sense of excellence through holding the notion if the context would have been structured differently they would have been succeeding. It was in this context that UBY longed for teachers who would not judge them and inform them of their fate. Maintaining this false sense of excellence therefore spared them the burden of affirming their academic incompetence for themselves.

The second way that UBY resolved the challenge of adapting to the academic rigours of the context through the trauma-alleviation model was to hold the assumption that care mattered more than content. The assumption of care being important more than content had utility in, firstly, providing connectedness for UBY through which they compensated for their academic alienation. UBY underperformance in a context which valued results was vitiating. This vitiating of UBY caused them to be disconnected from both the subject and their teachers. Life sciences and the life sciences teachers became of no significance for the UBY. To fill up the void caused by alienation premised on the assumption of care over content, UBY rallied together and addressed their need for connectedness. By managing to connect UBY achieved a sense of competency since their competency was no longer judged on content but on their ability to rally together.

Other than substituting content with care the assumption that care mattered more than content also alleviated UBY youth trauma and allowed to retain their sense of competence by allowing them to attribute their failure on their teachers' perceived lack of care. Through constructions of what constituted care, UBY made care provision unattainable in the life sciences classes. Whilst they wanted their teachers to engage them they did not want to be questioned. Whilst they wanted their teachers to push them they didn't want to be picked on. Whilst they needed more help they did not want to sit at the front. The temporality of UBY notion of care made it a pedagogic mirage. As the teachers failed to meet the criteria for care as reconstructed by UBY, the latter attributed their failure to the lack of care. In this way UBY absolved themselves of their culpability in their academic underperformance. Thus, the assumption of care over content through absolution of responsibility for failure from UBY allowed them to avoid the trauma of academic failure and the sense of incompetence that came with it. The assumption that care mattered over content therefore provided both trauma alleviation and avoidance through justification and attribution.

The five assumptions and related deeper abstract assumptions presented above came across as the major assumptions held by UBY which informed their actions in grade eleven life sciences classrooms at NHS. However they were not the only assumptions I also managed to decipher two other latent assumptions that I present below.

6.5.6 OTHER UBYC ASSUMPTIONS

Informed by Schein's (2004) analytical framework, other UBY assumption could be inferred from the five above and other UBY enactments. With regards to Schein's mission and strategy I deciphered the assumption that UBY were not at NHS only for life sciences but also as agents of space recapture. In holding the assumption of differential treatment UBY whilst holding assumptions of having a superior social identity and power UBY assumed that they were fighters. To justify their militancy UBY held the assumption that they were at NHS to advance the Black cause. They were at NHS to learn and as transformative agents latently engage in space recapture through the integration of Black people in previously racially segregated spaces. This assumption explained Magic's statement "they did to us...now it's our time" (dialogue, 12th May, 2014). This assumption also explained the way UBY reacted to the life sciences teachers' disciplinary measures and treatment. They felt it was their responsibility to transform the life sciences classrooms structure for themselves as well as for generations to come. It was in the context of this assumption that Flambo V contended that a Black person should never own up to a White person and all of them held opinions about what teaching ought to have been. In alluding to running the school their own way, UBY held the assumption that they could have their way in the structuring of the context in ways that allowed them to transact their cultural capital. Schein's consensus on the means was achieved and it seemed the operationalisation of power was overt outright defiance and standing up when infringement was perceived by any UBY. Power operationalisation was also covert and involved disruption of processes when not involved or engaged. This explained lesson disruptions, the underlying agenda was, if rows four to six were not learning then rows one to three were not going to learn. If the teachers frustrated UBY, then through covert and overt disruptive conduct UBY would disrupt their lessons and everyone would suffer like them as they were not learning anything in that particular class.

Another important assumption related to time. For UBY, time was polychromous and was less important than relationships. By being polychromous time was regarded as a medium defined by what UBY managed to do rather than the clock. This explained the perceived lack of urgency in task completion by UBY and the tendency to work and complete tasks as a group

amongst UBY. The latter indicated that relationships were more critical than the pursuit of rationalised efficiency. This assumption also explained why UBY came late for the life sciences classes as they had to attend to relationships which for them mattered more than academics.

6.6 THE NATURE OF UBYC IN LIFE SCIENCES CLASSROOMS AT NHS

In the preceding sections I have endeavoured to present the UBY basic assumptions. These were the tacit constructs that informed how UBY perceived the context and structured their enactments. In this section these assumptions are discussed. Sequenced as the assumptions above, the discussion is descriptive, in an attempt to capture the nature of UBYC, hence addressing the second research question.

6.6.1 Authenticity of UBYC

According to Fanon the “most stupendous frauds of our period are constructed” (2008, p. 163). Such frauds, according to Fanon have arisen from overtures aimed at ascribing meaning and determination of direction for unhealthy manifestations. As I set on this research journey my focus was to explore phenomena that my colleagues had found disturbing and impacting on their classes. In my journey of exploration, guided by Schein’s analytical framework I found that the puzzling phenomena were myriad enactments premised on deeply located and jealously guarded shared solutions by UBY as they tried to be themselves in life sciences classrooms at NHS. The enactments that my colleagues and I had witnessed were found to be informed by several basic, yet tacit assumptions. Thus, the key finding of this study was that there was an organisation called UBY in life sciences classrooms and this group had its organisational culture which governed how they perceived, thought and felt (Schein, 2004) about the context they were in. This organisational culture I referred to as Urban Black Youth Culture (UBYC).

Deciphering UBY basic assumptions foregrounded the need to interrogate its authenticity. Authenticity of UBYC is an issue in the context of the raging debate amongst social scientists on whether culture is invented / created or discovered. The dominant essentialistic discourse posits that individuals bring their enactments and tacit assumptions from their homes and communities (Aikenhead, 2004; Barton & Yang, 2000; Gay, 2010; Ladson-Billings, 1995). Deviating from this dominant essentialistic discourse my findings in this study sustained the view that UBYC was not a fallacy but genuine manifestations of a novel social structure.

Contrary to dominant notions of learners bringing their home cultures to the science classroom (Aikenhead, 1996), this study established that UBYC was not imported but was an UBY invention in the life sciences classrooms of Ms Perkins and Mrs Moosa. It was an UBY creation as they grappled with their external reality. I hasten to point out in its creation UBY also integrated some aspects from other cultures, particularly aspects of assumptions of Blackness and Africaness. The finding that UBYC was an UBY creation was significant because it provided for an alternative understanding and theorising of social fields like life sciences classrooms in desegregated spaces, as I attempted to understand the puzzling phenomenon.

Whilst research in South Africa has problematised classroom practices and the classroom climates they produce (Glover, Lynch, Ilesley & Webb, 2002), studies seem not to have established conscious learner responses to classroom practices and associated climates. Research that has explored classroom social realities has largely constructed UBY as victims of institutionalised racism (Jansen, 2004; Meier & Hartell, 2009) with no agency. However, this study found that UBY are agentic and have the capacity to adaptively construct and reconstruct their reality, as evidenced by the invention or development of UBYC in life sciences classrooms at NHS. Confirming Sewell's (1998) postulation, UBY contrary to the dominant discourse which projects learner enactments and culture as remotely prescribed and regimented, were found to be decentred subjects with a dynamic social identity configured according to context and their positionality in that context. UBY as active self-determined actors were observed to be constituted and constituting their own reality. This ability of UBY to constitute structuration presented UBYC within Schien's framework as authentic.

The authenticity of UBYC was also demonstrated when it was subjected to a analytical consistency evaluation. From Schein's (2004) analytical framework, culture is a generated solution to external adaptive challenges and issues of maintaining group coherence. From a cultural analysis of NHS and the life sciences teachers' assumptions in chapter five, the context constitutive of the external reality that UBY had to adapt to was deciphered. This reality included the pressure and threats of assimilation and assumption of a Eurocentric identity and whiteness, subjugation and total capitulation to authority, the surrender of their power, and restriction on the enactment of their agency and the threat of academic failure. It was this study's unique finding that other than UBY resigning their fate to the context and becoming victims, they developed basic assumptions that allowed them to survive and flourish in life sciences classrooms. Surviving and flourishing here implies the satisfaction of their needs for

autonomy, competency and connectedness (Ryan & Deci, 2000). Such assumptions included the assumption that they were privileged and advantaged, an assumption which gave them fictive superiority which sustained their positive social identity and agency; they had power which enabled them to resist assimilation and vassalage and to enact their agency and retain their sense of autonomy; their relations had precedence over anything which enabled them to integrate and face external adversity and gave them a sense of connectedness; they were being treated differently and unfairly which provided them justification for fighting and overtly affirming themselves which gave a sense of competence in a context they were failing; care mattered more to them than content in life sciences classrooms which served as a strategy of internal integration and an adaptation to academic underperformance which also absolved them of the responsibility for their academic underperformance and allowed them to connect and feign competence ; success was materialistic and not equivalent to educational attainment which was a reflection of their espoused values and an affirmation of their social identity; they had multiple roles in school which was an expression of their agency and lastly they were polychronic which confirmed their social being. At a deeper level, reality for UBY was social and inter-subjective, time orientation was in the past with a continuum to the immediate present. They were highly communal with a low power-distance index. To be human was to be social having *Ubuntu* (Odora-Hoppers, 2005) as they saw humans as a social being with social needs. All these assumptions provided adaptive solutions for the UBY. By meeting the criterion of being a solution to challenges, both external and internal UBYC, through the above assumptions was an authentic culture.

UBYC's validity and authenticity also lay in its conformity to Schein's model for cultural analysis. Within Schein's framework the authenticity of any culture lies in its utility as an explanatory frame. As I deciphered UBY assumptions the utility of UBYC in explaining the puzzling phenomena that had unfolded in my colleagues' classrooms, was evident. Without understanding these assumptions it would have been impossible to decipher the overt and covert enactments observed in life sciences classrooms. Understanding anchored in these assumptions helped appreciate and explain the concerns raised by Mrs Moosa in the prologue and Ms Perkins' frustrations and worries with UBY. By virtue of this utility and through meeting Schein's criteria for organisational culture, UBYC was a culture. It became clear that UBY enactments in grade eleven life sciences at NHS were not episodic knee-jerk reactions but deeply grounded rituals with temporal manifestations. The argument here is not whether the enactments were fictive or facades but the fact is that these enactments as facades were

exhibitions of a unique cultural identity. The verification of the existence and authenticity of UBYC at this deep abstract level as accomplished in this study was a paradigmatic shift from the dominant discourse of understanding based on enactments which are temporal and elusive to one which was deeper and had the potential to accommodate the dynamism of enactments, hence had greater utility in explaining Fanon's (2008) unhealthy manifestations in the context of desegregated science classrooms like those at NHS in South Africa.

6.6.2 The nature of UBYC from assumptions about social identity

As I deciphered UBY assumptions about identity it dawned on me how complex and contestable UBY identity was, an aspect also identified by Beachum and McCray (2004). Despite its unique and multi-faceted nature, five dimensions of UBYC social identity emerged from data analysis and facilitated the deciphering of the nature UBYC. Firstly, there was a racial dimension to their identity, a dimension through which UBY acknowledged their phenotypic characteristics. As UBY revelled in their Blackness UBYC became racialised to an extent. Secondly, UBYC had an ethnic dimension which I inferred when urban youth compared themselves to their rural peers and other Black learners in the life sciences classroom. Thirdly, there was a national dimension to UBYC, evidenced by UBY identifying themselves as Black South African and the democratic struggle. UBYC, through this dimension, rendered UBY an identity with which they laid claim to the country and all in it, including NHS. Fourthly, there was a social dimension constituted by their expressed social conceptions, which largely constituted their tacit assumptions. Lastly, UBYC had a political dimension. In our dialoguing UBY unapologetically vocalised their commitment to certain political values. These five dimension seemed to form the architecture of UBYC social identity.

The multi-dimensionality of UBY social identity seemed crucial for them as it provided a larger base to sustain their fictive superiority. As I deciphered the assumption that UBY had a superior social identity, the contradiction between their ethnic and academic identities was apparent. It was a huge contradiction for UBY to claim superiority whilst, by their own confession were having academic challenges and harboured some socio-political nervousness. At one point UBY confidently expressed their invincibility and superiority and a moment later they would register their vulnerability and susceptibility, the latter emanating primarily from their knowledge of the historical marginalisation of Black people in South Africa. Schein (2004) contends that it is in this seeming cultural discord that cultural meanings lie. In my analysis I interpreted that to mask their academic failure and a sense of incompetence that came

with it as well as their racial vulnerability in a context structured on euro-centrism UBY developed and embraced the assumption of a superior social identity. The persistence of the inherently contradicted enactments and what they professed in dialogues led me to conclude that the assumption, though genuine gave UBY fictive superiority, hence lapses as they expressed vulnerability. Other than the sense of autonomy and competence that came with it, fictive superiority also allowed UBY to enact in unpredictable ways depending with how they would have adjudged the context. This aspect therefore made UBYC at the surface dynamic, slippery and performative.

The questions that arose as I pondered the fictive nature of UBY superiority was how were they managing to survive on a façade? How could fictive superiority be sustained for such prolonged duration? Findings from this study suggested that other than the material endowments, UBY superior social identity was also premised in “names” as Top Dog explained. It was in being that guy that everybody talked about. Thus, a superior social identity ceased to be derived from artefactual attributes linked to the context as structured by their teachers but rather on recognisability. Like actors on a theatrical stage UBY through their enactments wanted to be seen and known by everybody. I hasten to point out that mentioning this finding is not a veneration or romanticising of some of their negative enactments. Perhaps this is an argument of means versus ends and my focus here is on the ends. Through basing their superiority on recognisability, UBYC reconstructed superiority from materialism to self-consciousness, in other words from superiority over to superiority in *self*.

According to Fanon (2008) “self-consciousness exists in itself and for itself in that and by the fact that it exists for another self-consciousness; that is to say, it is only by being acknowledged or recognised” (p. 168). Fanon’s (2008) contention is that it is in the recognition by the other, through consciously choreographed actions, that human worth, feelings of superiority and competency are condensed. Youdell (2003) supports the reality of this kind of superiority as she foregrounds performativity in understanding Black learner discursive practices. It is Youdell’s view that performance is a manifestation of superiority as it renders to agents the ability to name and enact practices that produce that which they named. From Youdell (2003) it follows that as UBY defined and described themselves as superior and privileged, they lived their lives as such, they named their life and so it was. UBYC in reconstructing and re-defining superiority, thus freed UBY habitus (Bourdieu & Thompson, 1991) and their productive power (Foucault, 1997) in visible, decipherable ways as way of

sustaining their fictive superiority through recognisability. The possibility created by UBYC reconstruction of superiority was that it provided UBY with a reincarnated type of superiority which did not conform to the dictates of the context or other external and material realities. In this way UBYC rendered superiority to UBY despite their lacklustre academic performance in the life sciences classrooms. The tragedy of this form of superiority was that it blinded UBY from their reality of their fate, a blindness which caused them to enact in ways that limited their learning opportunities in the life sciences classrooms as they relished other outcomes.

6.6.2.1 The dynamic nature of UBYC

It was this study's finding that the dynamic nature of UBYC allowed UBY to metamorphose into anything that they pleased in the life sciences classroom. Endowed with this ability to transform in response to contextual demands, UBYC, through deliberately "acting up", structured and constituted UBY with a dynamism that enabled them to be who they pleased to be, when they wanted to be, as dictated by their evaluation and interpretation of the context. Viewed in the context of their dynamism, UBY seemed to be operating in a cultural odyssey and were "*cultural straddlers*" as Ariza and Berkey (2009, p. 49) refer to them. As straddlers they seemed to be constituted by different realities which at times were antagonistic. However, in this study the explanation for this straddling and therefore the dynamism of UBY artefacts emerged as I considered their espoused values, the context as structured by their teachers and their inability to cope in this context. UBY were "cultural straddlers" (Ariza & Berkey, 2009, p. 49) or "marginal man" constituted by different and oftentimes antagonistic tacit assumptions (Calmore, 2005, p. 112).

Viewed within the lens of cultural straddling or what Calmore (2005) refers to as the "*marginal man*"(p. 112), the dynamism of UBYC assumed the form of consciously negotiated ways of being meant to defy conventional expectations (incompetence in the life sciences classroom) and an alternative to reluctance or failing to be euro-centric. Such negotiated ways of being could not be static as that would allow those outside the culture to know about the culture and realise its fictive nature. It is in the context of the threat of unmasking that Top Dog explained that as UBY engaged with a particular figured world, like the life sciences classroom, they constructed and structured ways of being that which made them to be perceived as different individuals all the time. However, as found in this study, in consistently becoming different individuals, UBY, as observed in this study, constituted themselves in conflicting ways. Thus, although the dynamic nature of UBYC enabled UBY to negotiate their academic

and ethnic realities, it left them with a great deal of internal conflict as expected when one holds extremely conflicted assumptions, as they did. Endowed with dynamic responsive fluidity, UBYC appeared to be constituted and constituting a fluid cultural identity matrix for UBY. From this fluidity I interpreted UBYC as unscripted, improvisational performance. It was within this context that Ms Perkins would speak of the unpredictability of UBY engagement in class, as she posited that some days are good and some bad. It was also within this context that sitting at the back would on one day affirm assumptions of a superior social identity, on another day an enactment premised on the assumption of care over content. This unpredictability seemed to have made it difficult for life sciences teachers to attend to UBY challenges as the meaning in manifestations was temporal and elusive depending on the assumption invoked by UBY as they perceived the context. Considering all above I interpreted UBYC not as a pre-given cultural text, as essentialists purport, but rather a dynamically mediated performative construct.

6.6.2.2 The performative nature of UBYC

An exploration of the context in chapter five revealed some challenges that UBY had to contend with. From my analytical framework I interpreted such challenges as: threats of invisibility – UBY feeling they were not recognised as significant autonomous beings; threats of erasure – UBY feeling that they were not identified as significant competent players in the socio-political space; lastly, threats of being *othered* – UBY feeling that they were not worthy to belong and be active participants in the socio-political space. An exploration of the context revealed that NHS and the social structure at NHS and in life sciences classrooms were lacking in mitigating these factors, a context which threatened UBY with invisibility and erasure. Such a context in terms of performance set a stage for UBY to protest their status, a notion from which I interpreted UBYC as a performative culture. Their focus in this performance was the need to be seen or what I regarded as affirmation through recognisability.

The understanding that sustained my interpretation of UBYC as improvised performance is presented by Calmore (2005) who characterises performance as a self-constituting dynamic social enterprise involving an individual or a group of people going beyond the confinement of the context to re-interpret, re-invent, re-present and re-define themselves, in front of an audience. In regarding UBYC as performance from Calmore's characterisation, three concepts from the theatrical stage helped validate my interpretation. Firstly, performance occurs on a stage. As I interpreted UBYC as performance, the life sciences classroom and NHS became a

stage, with UBY as actors on it, surrounded by an audience – which included everyone else in the context. The second fruitful concept from theatre lies in the exegesis of ethnographic process. Johnson (2003) posits that in ethnographic settings there is a bodily co-presence of two dynamically constituting parties – that is, the researched and the researcher. Perceived within this dynamism, performance involves a bodily co-presence of the actors and the spectators, at a particular time and place to share a situation, a rendezvous from which they co-create each other's reality. Responding to this reality, UBY, their teachers and other learners being neither fully autonomous nor fully determined by others, due to the systemic nature of organisations, invent and develop ever-evolving enactments in a staging process.

The performative nature of UBYC, like its dynamism explained the multiplicity of UBY ritualistic artefacts and the cultures' unpredictable dynamism. This unpredictable dynamism of UBYC exposed the third concept that supports the notion of UBYC as performance, that of, the non-transmission of pre-given meanings. It was my finding that the meaning of cultural artefacts though anchored in deeper tacit assumptions was always in the present. Contrary to dominant essentialistic scholarship which portrays enactments as conveyance of scripted pre-given meaning, the notion of UBYC as performance placed meaning in the enactment. Despite historical linkages it was my finding that by virtue of being performance, UBYC and UBY functioned as a presence in the present. This attribute of UBYC lowered the contingency of ascribing meaning to enactments on the basis of previously witnessed staged performances, an aspect which made interpretation at artefactual level a minefield (Schein, 2004).

6.6.2.3 The political nature of UBYC

Politically, the assumption that UBY had a superior social identity went along with that of UBY being militant. The expectation would have been that with superiority there would be no need for UBY to fight for anything; all UBY needed to do was invoke their superiority and lay claim. The assumption of UBY being fighters has been recognised and acknowledged by scholars (Hooks, 1992; Sewell, 1998; Staples, 1982; Youdell, 2003). These scholars have attributed the assumption of being fighters to UBY: internalised oppression (Hooks, 1992); reactionary phallogocentric revenge (Staples, 1982); or hedonism – replacement of school goals with own agenda (Sewell, 1998). This study's findings were consistent with those of mentioned scholars in that UBY in life sciences were also engaged in a struggle. However, my concurrence with the scholars ends in the acknowledgement of the enactment of this struggle.

What emerged from observing artefacts in the life sciences classrooms at NHS was that UBY seemed to be engaged in what Calmore (2005) termed status protest. Calmore uses the term status in reference to cultural relations between ethnic groupings in a context. Relationally status is defined by culture and one's identification with a culture is regarded as essential features of a person's status (Calmore, 2005). Viewing UBYC as performance, with UBY being actors on a stage engaged in status protest, their struggle was conceptualised differently. UBY in life sciences classrooms at NHS seemed engaged in a fight against what they perceived as assigned parameters. UBY as confirmed by their need to be part of or at the top of the food chain, made themselves believe that they were in a political struggle or their performance was a contestation of those structures that they believed denied them the opportunity to be part of or at the top of the food chain. Linking this contestation with assumptions of a superior social identity it became my view that, politically, UBYC as protest culture was premised on UBY new found superiority status, a positioning which led them to reject other assigned parameters by other actors in this arena. It was a struggle against the questioning of their superior status and their agency by arrangements of the context. Theirs was a struggle against a positioning that would open them to anxiety and trauma associated with failing to cope or the reluctance to conform to the dictates of the context.

Scholarly work posits that Black youth culture is nourished by Black history (Ariza & Berkey, 2009; Calmore, 2005; Emdin, 2010). Consistent with this scholarly postulate, findings in this study established the centrality of historicity in UBY assumptions about their identity and the historical bias of the nature of UBYC. In dialogues UBY used referents like, "we Black people", "like in past", "during apartheid", "those who came before us". From their narratives they venerated icons of Black civil rights movement like Dr. King and anti-colonialism icons like Robert Mugabe as their heroes. It was from such referents that I interpreted the historical locus of UBYC. It was my interpretation in the context of this locus that Flambo V was adamant that he would not own up to a White person. As I presented the findings I pointed out how the locus of history led me to decipher more abstract assumptions of UBYC such as those of reality, truth, and time orientation, which reviewed scholarly work has yet to acknowledge. It seemed UBY at NHS had inherited a historically bound political orientation. What was striking in this finding was that UBY tended to hold these historically-nuanced notions despite their denial of historicity's subservient positioning. It was my view such historical orientation was adaptively expedient for UBY as it sustained and nourished their assumptions, particularly those of having power and being treated differently and unfairly. Thus, the political nature of UBYC deriving

from their historicity endowed UBY with power to enact with a greater degree of autonomy and defiance.

My findings were that politically UBY identified with Blackness and at the same time were affiliates of UBYC at NHS. Thus, they had dual ethnic status, which made their status protest assume a dual nature performed on a single stage, the life sciences classroom. At one point they would express and allude to their engagement in struggle at NHS, and a moment later they would register their comradeship for the defence of Black people against whiteness in society at large. From the duality of their ethnic identity, I interpreted their struggle to be premised on ethnic expectation. In this regard the political nature of UBYC took the form of an affirmation of their ethnicity. Contrary to views of UBY fight being a crusade of vengeance, in this study I noticed that some of the fight was aimed at affirming group membership, both to the Black collective and to UBY at NHS. As argued by Calmore (2005) UBY militancy ultimately became performance in the face of history and in the company of others striving for the negotiation of the problems and pitfalls of claiming and maintaining membership. It seemed UBY held the view that they had to fight for *blackness*. Due to the political nature of UBYC, UBY enactments ceased to be a veneer for turmoil arising from the tactics of self-disciplination (Foucault, 1990), but rather, were citations of an enduring cultural discourse fuelled by seizure of opportunity to go up the food chain and confirmation of kinship at NHS.

6.6.2.4 The hybrid nature of UBYC

From the ethnic duality of their protest culture I interpreted that UBYC was a hybrid culture. As a hybrid culture, it was constituted by the past and the present yet operating in the present. As a hybrid construct UBYC had artefacts from other cultures, for example, the music, savviness of technology, the accent and fashion sense. The resulting hybridised culture (UBYC) was not a mosaic constituted by the feeder cultures, but a novel homogenised organic amalgam of webs of meaning.

6.6.3 The nature of UBYC from assumption about power

As I reviewed literature in chapter two, I highlighted the dominant discourse on the culture of power as postulated by Delpit (2006). I mentioned the five postulates that Delpit argues the culture of power is premised on in classrooms. Such postulates included the notion that power enactments occur in the classroom; there are codes and rules for participating in power; the rules of the culture of power are of those who have the power; those not participating

in the culture can become part of the culture of power by mastering the rules of those in power; lastly, those with power do not usually acknowledge it, whilst those without it are most aware of its existence. Delpit's postulates have sustained a monolithic view of power in the classrooms with the teacher being the primary power holders.

As I deciphered UBY assumption about power, what clearly emerged was that the traditional power discourse and taken for granted teacher moral authority had been disrupted in the life sciences classroom at NHS. Contrary to Delpit's view, the life sciences classroom context seemed neither caste-typed nor tiered with the powerful and the powerless. What I witnessed with regards to power and its deployment conformed to Foucault's (1997) notion of delocalised multi-directional power. The architecture of this new power dynamic that I witnessed in life sciences classrooms at NHS resonates with what has been termed reciprocal power (Cothran & Ennis, 1997). Through reciprocal power UBY constituted themselves as equally powerful and mutually exerting equal degrees of control to that of their teachers. The UBY-life sciences teacher power has been conceptualised by Emdin (2010) as power coming face to face with power. In this dynamic, contrary to Delpit's view, UBY did not perceive themselves as powerless, hence compelled to play by or master the rules of those in power. Whilst UBY at NHS acknowledged the existence of the culture of power in their classroom, the notion of becoming like the dominant culture for the sake of power was not entertained. These findings resonate with those from *Learning from Miguel*, (Barton & Yang, 2000) which confirm the reluctance of those perceived to be powerless to become part of the dominant culture of power.

Deciphering UBY assumptions about power meant that I had to interrogate power vis-à-vis UBY. From my analytical frame this implied an interrogation of UBY power with regards to its differentiation, objectives, realisation, institutionalisation and rationalisation. In the ensuing discussion I discuss differentiation, objectives and realisation, features of power that were clearly decipherable in the engagements I had with UBY.

6.6.3.1 UBYC power and differentiation

To better understand differentiation it is important to recall Foucault's (1997) notion that power is made manifest and is operationalised in relations. It is within this regime of truth that Foucault calls for power analysis to proceed from an examination of relations. Within such an analysis power ceases to be a capacity to coerce or enforce compliance but relational differentiation against a background of conflicting organisational interests (Cothran & Ennis,

1997). Thus, differentiation deals with distinctions made by organisations about other organisations. It is Foucault's (1997) belief that in the making of these relational distinctions power is made manifest. In deciphering UBY assumptions about power, I found that UBY power differentiated. Through defiance, arrogance, standing up and other enactments UBY differentiated themselves from their teachers and their classmates. Shrouded by the assumption of a superior social identity and the pursuit of recognisability, UBY enactments seemed meant to set them apart from everyone else within the life sciences classroom. These enactments were not meant to solely impact negatively on those they classified as different from them, but served as identity signifiers or cultural descriptors in the process of differentiation for them. Thus, differentiation for UBY as a feature of power, served to circumvent erasure thus sustaining the attributes that sustained UBY as a distinct cultural entity. It was my finding that UBYC operationalisation of power through differentiation was meant to circumvent erasure and censure the essentialistic notion that all Black learners were the same. Through differentiation UBYC guaranteed UBY recognisability.

6.6.3.2 UBYC power and objectives

With regards to objectives, UBY registered their intentions in power operationalisation. In the light of Schein's analytical frame, power served a dual purpose: that of external adaptation and internal integration. In terms of the former, the challenges presented by the context have been spelt out in chapter five. It seemed power was operationalised by UBY to diminish threats to their autonomy and competence. Vehement claims that the school could not change UBY or make them do what they did not want to do affirmed operationalisation of power for autonomy. Claiming that they could pass and excel if they decided to, with an air of nonchalance was an expression of longed for competence and fictive superiority. In both cases power was operationalised to circumvent the challenges of external adaptation, embodied in perceived constraints on autonomy and competency based on failure to cope academically and their reluctance or inability to conform.

Top Dog's sentiments as he described how the food chain was structured and worked revealed the relational aspects and operationalisation of power amongst the UBY. I considered the objective of this power operationalisation to be internal integration and enhancement of connectedness. Earlier on in this chapter, I alluded to the diffuse nature of power amongst UBY, and also mentioned the existence of a hierarchy. The existence of a hierarchy, operationalised power relationally and accomplished two things: firstly, it established a core of purported founders of the culture (Schein, 2004) who served as the custodians of the culture,

with what I observed to be soft power operationalised to maintain some structure for the organisation. I regarded this power as soft because, on a continuum extending from consent to domination, the operationalisation of this power was towards the former. The harshest punishment to UBY who failed to conform, was being ostracised, which was reserved for those they regarded and classified as “sell outs” (Ariza & Berkey, 2009, p. 51). For UBY it seemed not being one of them and not sharing in their recognisability was punitive enough. What was not confirmed in this study was whether the perceived sell-outs regarded UBY ostracism as punitive. Secondly, the hierarchy and its relational aspects to power served as a mechanism of continuity for UBYC. The highest accomplishment for UBY was to be at the top of the food chain, an aspiration which as confirmed by Top Dog guaranteed recruits for the culture and its spread as a virulent infection. Thus, the objective of power when operationalised internally, within UBYC was dual: to safeguard the organisation from autolysis and ensure its continuity.

6.6.3.3 UBYC power and realisation

Realisation as a feature of power examines how power is operationalised. It is important to point out that UBY were well aware of what was expected of them. They knew the rules and policies they were supposed to yield to and the enactments that were ‘rewardable’ by their teachers. UBY acknowledged their teachers power to teach, from which they knew the teachers derived the moral authority to coerce them to learn. This dynamic Emdin (2010) has termed the *power to teach versus the power to learn*. A realisation of this power dynamic seemed to influence the strategies or how power was operationalised in life sciences classrooms at NHS. Through realisation, UBY operationalised their power predominantly through withholding of compliance. In the life sciences classrooms at NHS withdrawal of compliance was enacted through observable enactments which included: non-participation and disruptive enactments. Non-participation came across as a strategy to convey messages beyond the superficial dialogues between UBY and their life sciences teachers. It was a non-verbal retreat into their power zone which mobilised and operationalised their power through withdrawal of participation. It was this study’s finding that UBY operationalised their power in this subtle way as a *dare to challenge* tactic, through which they dared the teacher to enter their power field. Under realisation I also interpreted sitting at the back as masked non-participation through which power was operationalised through the trivialisation of all other happenings in the classroom, including the teachers’ power to teach.

6.6.3.4 UBYC power and UBY militancy

The assumption that UBY had power at times translated into UBY operationalising their power through overt enactments. Power operationalisation at NHS through overt aggressive enactments took four forms: slow-downs, diversions, interruptions and battles. In my interpretation, artefacts like UBY not standing in the line, taking their time to get to class, taking time to get into groups or forgetting their textbooks were slow down strategies to retard lesson pacing hence disrupting the life sciences lessons. UBY engaging in other non-scholastic activities during the lesson was another way they used their power to disrupt the lesson. As the teachers' attention was diverted to UBY enactments in an attempt to re-affirm their power to teach, the lesson was disrupted. At other times UBY verbally interrupted the lesson by asking questions aligned to their interests. My observation was that one UBY would ask such a diversionary question, which had a domino effect as other UBY posed other diversionary questions. With a penchant to explain or perhaps as an ethical imperative the teachers tried to address all these questions, without realising that the lesson had been disrupted. Lastly, when problems were acute, UBY exhibited open hostility and aggressive behaviour, as captured in the incident reports. In my interpretation I characterised this exhibition and enactment of open hostility as *battling*. In battling, power realisation through aggressive behaviour launched UBY into a battle mode, or what I regarded as spectacular displays of power. In this mode, UBY through verbal and other physical enactments directly validated their power through the direct erosion of the teacher's power in the presence of all.

6.6.3.5 UBYC power and loci of operationalisation

Another unique finding in this study was that the diffuse nature of power distribution amongst UBY mirrored the multi-nodal origin of its operationalisation. Foucault (1980) posits that power is not a quantity that can be possessed, but rather it's a construct exercised from anywhere. By virtue of power being a construct and not a corporeal entity, it follows within a Foucauldian frame that its locus is non-existent. Whilst acknowledging the danger of power having loci, it was my finding that UBY power was operationalised from three relational aspects. I reiterate these aspects were not sources of UBY power, as this implies causality, a notion that does not resonate with my understanding of power invoked in this study. I took these three relational aspects to be informing premises or domains within which power was operationalised. These as an analogy were like shoes that UBYC provided for UBY to wear as they operationalised their power. The three relational aspects from which power was operationalised included, the political, canonical knowledge and personality.

When UBY spoke of their history and how they (UBY as part of the Black political collective) vanquished the political system that had been deployed against them, they presented the political nature of their relationship with their teachers. Their remarks resonated with Sewell's (1998) observation that Black youth socialisation starts and continues within the communities of which they are still part of. As much as democratic change in South Africa being ushered in by negotiation between all the parties that had been engaged in the protracted struggle, for UBY the country was born out of a struggle that was won, which for them implied non-Blacks had been beaten. This notion positioned and constituted them as politically powerful over their White and Indian teachers. Though an erroneous historical assertion, UBY came across as having embraced this political view, hence UBY remarks that at NHS, UBY had to show everybody that the political tables had been turned. In articulating that now was their time, UBY constituted themselves with political power to negotiate how life could and should be lived at NHS. What emerged from such UBY proclamations was an affirmation that UBY power had assumed political operationalisation. Such operationalisation of power within the ambits of Black post-colonial political discourse has been recognised in the rise of the hip-hop culture in the United States of America (Sealey-Ruiz & Green, 2010). For these scholars, post-colonial youth cultures as observed with UBYC tend to have assumptions anchored within the larger body politic. With such a historical premise UBY regard the exercise of this political power in spaces like NHS as a cultural imperative.

The second relational aspect in the operationalisation of UBY power took an epistemic form. Within Foucault's conceptual framework power and knowledge are two sides of the same coin, as the two are not external to each other, but operate with a dynamism that is mutually constitutive. UBY operationalised their power from their teachers' position of ignorance or limited knowledge about them. UBY operationalised their power from canons of knowledge they had about their teachers. As I discuss this relational aspect it is important to revisit one of Foucault's (1997) claims about power, in which he contends that "nothing can function as a mechanism of power if it is not deployed according to procedures, instruments, means, and objectives which can be validated in more or less coherent systems of knowledge" (p.52). UBY invested in knowledge about their teachers, as such their relation with the life sciences teachers was based on intimate and intimated knowledge from their peers. It is for this reason that UBY claimed to know what to do and to which teacher. On the other hand their teachers and NHS were investing in mitigation of enactments with limited knowledge about who UBY were. Resultantly, UBY capitalised on their teachers' unfamiliarity with who they were, culturally.

Claims like those made by Big Man about Mr Ogden not knowing who he was, confirmed UBY awareness of a knowledge gap in their teachers' schema about them. This knowledge gap compromised the teachers' power in life sciences classrooms an aspect which UBY took advantage of. Aware of this gap UBY power remained a mystery, a feature which according to UBY served to generate fear in those outside UBYC, hence the claim that everyone else was afraid of them. Thus, at NHS the knowledge that UBY had and the ignorance of their teachers of who they were served in enhancing the operationalisation of UBY power.

The last relational aspect through which power was operationalised by UBY involved the notion of powerful personalities. This aspect was crucial for internal integration as it was for power exercise. In striving to be at the top of the food chain, UBY became engaged in a battle to build powerful personalities for the multi-nucleate clustering of the group. With these shoes on, UBY operationalised their power to become popular with their peers, as a means of becoming powerful personalities. Consistent with findings by Cothran and Ennis (1997), vying to be a powerful personality resulted in UBY clustering around certain persuasive UBY. My finding was that individuals like Top Dog, and Big Man were the nucleus of a united front that championed interests other than those of their teachers'. When these powerful personalities enacted or operationalised their power, they did so for the collective. Every time they did so they became a much more powerful personality even when they were already at the top of the food chain. As intimated by Top Dog, the powerful personalities had amongst UBY had a greater sway over all learners not just other UBY. When the teachers tried to recapture their eroded power by attacking such powerful personalities, a situation related by Top Dog emerges, one in which the conflict becomes incessant and more confrontational. Thus, the existence of these powerful personalities and the possibility of becoming a powerful personality also prompted the operationalisation of UBY power.

What was significant with UBY assumptions about power was that they altered UBY positionality relative to other parties in the context. UBYC, through these assumptions of power positioned UBY and constituted UBY as powerful and equally agentic, as their peers and teachers despite their academic challenges. In this regard these findings opened up a new way of seeing UBY beyond Delpit's notions.

6.6.4 The nature of UBYC from assumptions about relations

From the in-depth co-generative dialoguing with UBY, three forms of relations informed by their assumptions about relations emerged. These three forms of relations included: relations

between UBY themselves; relations with other Black learners (the front-row learners) and relations with everyone else other than front row Black learners, which included their teachers and learners of other race groups. The emergence of these three relational possibilities reaffirmed the fluidity and complexity of UBY social identities already alluded to above. However, on a functional level, it demonstrated the multifarious construction of UBYC. In the following section I discuss the nature of UBYC vis-à-vis relations.

6.6.4.1 The nature of UBYC in relations between UBY

This study found that with regards to relations amongst themselves, UBY functioned as an authentic community bound by the need for connectedness. The striving to keep it real (Ariza & Berkey, 2009) seemed to be the glue that bound UBY together and maintained their organisational stability. Keeping it real entailed being pro-Black and by design implied being pro-UBYC. Thus, for UBY social connections were a dichotomy between them and us, which implied either one was for them or against them.

Whilst researchers of Black learner identities have provided typologies with several relational forms (Sewell, 1998) for UBY there were just two, them or us. For those who were already part of UBYC, there was a passion to be part of the collective through enactment of UBYC rituals and overt displays of a veneration of UBYC and its protagonists at NHS. Studies of Black youth in racialised contexts acknowledge this collective identity as *fictive kinship*, and uses a racialised discourse to articulate it (Sewell, 1998). However, what featured prominently in this study in terms of UBY to UBY relations was that brotherhood and sisterhood was not racialised but based on cultural affiliation and gratification of the need for connectedness. This finding affirmed the authenticity of UBYC and the social connectedness that made them a distinct cultural entity. At NHS, UBY, by virtue of their superior social identity did not register their coming together as a safety or security strategy, but rather a socio-emotional support system. Being part of the collective seemed to conduce connectedness in UBY. Feelings of having someone behind you, served to provide UBY with emotional support and not a sense of security from being picked on by others or their teachers. Even though they sat and walked as a group, UBY seemed to enjoy the emotion of belonging to a group in which they could keep it real. This sense of belonging seemed to transcend the need for cover in a group inherent in fictive kinship. The diffuse nature of UBY power provided for its operationalisation by any UBY as an individual. Thus, despite UBY being a collective, they enacted as individuals and each of them cut their path in any context. Thus, despite UBY being integrated on the basis of sharing their experiences of the context, UBYC constituted UBY as non-vulnerable in relations

at NHS. Non-vulnerability positioned UBY as individuals who did not need the collective for security, but only for the socio-emotional need of connectedness. It was on these grounds that I held the notion that UBYC positioned UBY as a collective beyond fictive kinship and constituted them as a group bound by the need for groupness or connectedness.

6.6.4.2 The nature of UBYC in relations with other Black learners (conformists)

In terms of relational engagement, Black learners at NHS seemed to have two options within which to position themselves. This positioning resonated with the relational view that governed UBY engagements, that of *them* or *us*. In identifying with *us*, Black learners embraced UBYC and in opting for *them*, Black learners were perceived by UBY to have positioned and embraced a discourse of conformity and acceptance of the dictates of the school system at the expense of their agency. This was the identity reserved for front row Black learners.

Front row learners by being perceived as having bowed down to the dictates of the system and making UBY look dumb yet they were of the same skin tone as UBY, became sell-outs. By standing up and speaking against some UBY enactments in the life sciences classroom, they were regarded as traitors. By relating more intimately with and being helpful to their teachers they were labelled *suck-ups*. As they failed to rise up in defence of their fellow Black peers they were classified as effeminate. Lastly, by tending to focus on academics and performing relatively better than their UBY counterparts they were regarded as *nerds*, and not *street smart*. Through this positioning and being positioned this way by UBYC, front row Black learners were irreconcilably cast as anti-UBY. Findings were that, positioned this way these conformists paid the ultimate price, that of being ostracised and denied recognition as being BLACK. Placed within this dilemma, these conformists ended up in Youdell's (2003) state of racelessness and associated more with learners of other race groups without the need to be surrounded by fellow Black learners.

This treatment of conformists had a deeper functionality for UBYC at NHS. Firstly, it was demonstrative punishment for members to experience what it felt to be out of the collective. This experience seemed necessary for the internal integration of the group. Conformity posed a significant external threat to the survival of UBYC, and as such had to be approached as such. Thus, the treatment of conformists was an adaptive response to external challenges that threatened the very existence of UBYC. It is therefore important to note that

UBY relations with other Black learners mirrored that of conflicted cultural systems, but in this case conformist were dealt with as a threat from within, hence were dealt with ruthlessly.

6.6.4.3 The nature of UBYC in relations with teachers and non-Black learners

The relations between UBY and their teachers as well as Indian, Coloured and White learners were the third form of UBYC relational engagements. What was intriguing with this relationship was that it seemed to defy the dominant discourse of powerless, poor, urban Black learners at the mercy of white teachers and white learners in a former white school (Meier & Hartell, 2009). Even though their interactions were sometimes volatile and openly confrontational, UBY and everyone else other than the conformists maintained a functional truce. Such a state of affairs provided for episodes of progressive and constructive engagements, what Ms Perkins regarded as the good days. However, this state of affairs was culturally convenient as it allowed the rapid retreat of UBY into their trenches of academic attrition.

The basis of this relationship seemed to be what Cothran and Ennis (1997) regard as emanating from an absence of absolute power by either of the parties in the life sciences classroom. Absence of absolute power indicated an insufficiency of Bourdieu's *capital* on either side to independently transact. Such a context created the need for a context that provided for capital exchange, in other words both parties held resources desired by the other to influence the classroom dynamics. For example, the teachers as they professed needed a chance to pursue their syllabus, whilst on the other end UBY wanted to be left alone if they did not want to participate in the lesson. UBYC in such a situation contributed to the creation of a negotiated classroom context. This negotiated context I found was characterised by compromised values that bordered on indifference and individuated space, with UBY sitting in the back doing their own things and the teachers on the other end executing their lesson. According to Cothran and Ennis (1997) though never formally negotiated, the very interactions in such a context constituted the negotiation which then governed the operationalisation of each other's power. Thus, UBYC relational dictates for UBY relations with their teachers and other learners who were not front row Blacks was for such relations to be functional, reciprocated, contextualised and negotiated.

6.6.5 The nature of UBYC from assumptions about their lives at NHS

With regard to their lives at NHS and in the life sciences classroom, UBY held the assumption that they were treated differently and unfairly and criminalised. The findings that

led to the deciphering of this assumption revealed some interesting insights about UBY and UBYC. Firstly, the deciphering of this assumption from the findings above affirmed the existence of UBY voice and its centrality in the architecture of classroom realities within desegregated spaces in South Africa. What was significant in the deciphering of this assumption was that the voice of the Black learner was activated with regards to how they were experiencing the context. Research done in the South African context has largely focused on capturing the voice of the culturally dominant groups (the teachers and dominant learner populations in desegregated schools) and from these views the context are adjudged. The silencing of the UBY voice through its non-accommodation in South African scholarly work seem to propagate a myth that they are oblivious of their contextual reality. However, this study dispelled that myth, as it was established that UBY had the insight and depth of perception to see how the system was structured and a voice to articulate their feelings. Thus, this study fulfilled Foucault's (1997) call for the freeing of such subjugated knowledges into mainstream discourse.

International scholarly work has established the differential treatment of learners in multi-cultural settings with UBY experiencing inequitable educational opportunities (Barton & Yang, 2000; Gay, 2010; Ladson-Billings, 1995; Knight-Manuel, Marciano, Wilson, Jackson, Vernikoff, Zuckerman & Watson, 2016). Conducting research in desegregated primary schools in South Africa, Vandeyar and Killen (2006) made similar findings. In such settings, just like at NHS, teachers were observed not disparately treating their learners but giving preferential treatment to learners from similar cultural backgrounds as theirs (Vandeyar & Killen, 2006). Other than just reinforcing alienation, such disparate treatment has been conceptualised as constituting denial or inequitable access to high-quality learning opportunities (Knight-Manuel et al., 2016). Within the conceptual framework of intrinsic motivation this structuring of the social context did not provide opportunities for UBY to affirm their competence, neither did it conduce in them a sense of connectedness. The failure of the context to conduce feelings of competence and connectedness as gleaned from the findings thus provided fertile ground for UBYC invention and development. UBYC as a culture borne out of assumptions of differential and unfair treatment within the framework of intrinsic motivation, served to affirm UBY competence and provided a cultural space for those who perceived alienation to experience connectedness. As established in this study UBYC as an UBY creation countered the narrative of UBY being non-agentic and deficient in their capacity to resolve threats that had the potential of causing them psycho-emotion dissonance or threatened them with social trauma. It is within

the ambit of this argument that UBYC by being created and sustained by assumptions of disparate treatment played a dual role. Firstly, it provided the connectedness, hence the need to be for UBY. Secondly, UBYC premised on disparate notions provided justification for the continued existence of UBYC, as it served as a constant reminder of the threat that lay outside the group. In the latter sense the nature of UBYC from assumptions about UBY lives at NHS performed both an adaptive and integrative role.

6.6.6 The nature of UBYC from assumptions about success

The main casualty from my findings about the assumptions UBY held about success, was the very notion of success in the life sciences classroom. UBYC, through this assumption foregrounded the need to reconceptualise the concept success and its re-construction in the context of diversity. What I found as interpreted UBY remarks was that for them, success was in the emancipatory utility of tasks engaged in. Success was in the realisable material benefit of undertakings. This was an indictment of perhaps the teaching practices or the nature of the life sciences curriculum, because UBY intimations indicated that they were not seeing the utility of what they were being presented with in the life sciences classroom.

The second casualty of the nature of UBYC from assumptions about success at NHS, was the life sciences teachers' traditional power. As I deciphered the assumption about UBY success it became clear why there had been an erosion of the life science teachers' power. Traditional power relations in classrooms hinged on the learners' subservience to the teacher's power and moral authority based on the value placed by the learner on school success (Cothran & Ennis, 1997). In these traditional power relations the teachers' power was sustained by two assumptions: the teacher possessed some type of knowledge necessary for success (Emdin, 2010); to access this knowledge learners had to comply with the dictates of the teacher and the schooling system (Cothran & Ennis, 1997). It can be argued from a systemic cultural perspective that displacement of any of these cultural assumption results in dissonance and a new state of cultural equilibrium.

Whilst studying learners' and teachers' perceptions of conflict and power, Cothran and Ennis (1997) found that in the United States of America, low income learners and their parents held the assumption that success in school was not related to success after school. Resultantly, the learners viewed the teachers' power and moral authority as of no consequence (Cothran & Ennis, 1997). My findings diverged from this work. In the scholarly work considered above both parents and learners held the same assumption of success. However, in this study UBY

held this assumption displaced utility from education, whilst their parents placed value in education and its utility after school. In co-generative dialogues UBY professed of the sacrifice their parents were making to get them to NHS. NHS tuition structure was for middle-income earners, and therefore not cheap. Despite the fees UBY were at NHS and were aware that their parents had sent them to benefit from its historical advantage. I interpreted the holding of a different assumption about success by UBY to mean two things. Firstly, by holding a different assumption to that of their parents, UBY affirmed the authenticity of UBYC as a distinct cultural construct. I make this statement fully aware that UBY assumptions of success were a compensatory construct for their academic woes. Secondly, by holding an assumption different from that of their parents on such a crucial aspect, UBY were conveying valuable information about themselves. Other than prompting for the review of the notion of success in diverse contexts holding a different assumption to their parents was an exhibition of UBY agency and a proclamation of an epistemology of the other, a paradigmatic development that is not yet acknowledged and accepted in the South African context. Under this new paradigm and within a Foucauldian frame, UBYC, through the assumption that success in life was not related to academic accomplishment, launched a new power dynamic at NHS. Due to the non-utility of the traditional behaviour-for-success exchange system (Cothran & Ennis, 1997), UBY seemed to have recaptured their power to learn, and operationalised it when they pleased. With this recovered power, the life sciences teachers seemed no longer needed, hence their power was no longer absolute. Through the non-utility of the life sciences teacher UBY teaching was now supposed to proceed by negotiation. These findings and interpretation resonate with that of other scholars like Barton and Yang (2000) who have noticed and acknowledge a new power dynamic in science classrooms, particularly those with UBY. The essence of this power dynamic seemed to be centred on the need for recognisability and acknowledgement of agency hence the need for culturally-accommodative and responsive pedagogic practices. Such responsive practices transcend the constructivist agenda that considers what learners bring to class to who the learners are in class.

6.6.7 The nature of UBYC from assumptions about life sciences and teachers

The nature of UBYC with regards to life sciences and life sciences teachers was premised in the assumption that care mattered more than content. Underlying assumptions were: non-participation meant not important and; the subject was as good as the relationship with the life sciences teacher. From my analytical framework, the assumption that care mattered more than content fell in the domain of the challenges of external adaptation. Through structuring the life

sciences curriculum in ways that were not perceived by UBY to demonstrate care and empathy, life sciences teachers gave UBY a mission and strategy (Schein, 2004). UBY realised that they needed to huddle together to get that which the life sciences classroom was failing to offer and validate themselves in ways that the context as structured by their teachers was failing to do. In this regard my analytical framework overlapped with the conceptual framework. Within the frame of intrinsic motivation, the social structure was not addressing UBY needs of competency and connectedness. By failing to cope within the context as structured by their teachers embraced notions of being the strange and undesirable. Casting themselves as the *other* within Schein's framework, UBY had a goal to resolve and the means to resolve threats of incompetency and estrangement was the development of UBYC. Thus, what emerged from the way UBY resolved the perceived absence of care in the life sciences classroom, was a double-edged sword, called UBYC. With one edge it countered the external threat of being othered and estranged, and with the other eliminated the need for affirmation of competency and connectedness. Bound by UBYC, UBY acknowledged their superiority even over academics, but attributed their current academic challenges to the social structure deployed by their teachers. Therefore, as UBY vilified their teachers for curtailing their non-substantiated academic potential, which they contended was not a measure of their success, they affirmed their competency. Within the community of like-minded peers, their need for belonging and somebody willing to listen and give their time was met. This was the dual role of UBYC, as constituted and constituting UBY.

From a political dimension, findings on the nature of UBYC from assumptions about the subject and their teachers confirmed the non-realisation of integration in desegregated spaces, like NHS, in South Africa. These findings support observations made by other scholars like Jansen (2004), Meier and Hartell (2009) and Vandeyar and Killen (2006). In all this scholarly work the existence of the architecture for integration is acknowledged, against a backdrop of pervasively non-integrated desegregated classrooms. From observations in this study, it can be argued that contexts like NHS were segregated, desegregated spaces, as such was the contradiction between what I observed and expectations. It is within this context that the puzzling phenomenon made sense and needed to be conceptualised in efforts to better serve the diverse and different. Viewed this way it can be argued that UBYC in life sciences classrooms was a product of UBY having been lost in translation and on the part of their teachers it was a call to come out of the slumber and shrouded pretence that who they are and what they value was of no consequence to teaching and learning in the context of diversity.

6.7 CONCLUSION

Earlier on in this chapter arguing from my analytical framework, I alluded to the futility and non-utility of an exercise to generate an exhaustive list of assumptions. In this chapter, I began by contending that UBYC is culture developed by UBY in life sciences classroom at NHS. I presented the basic tacit assumptions I deciphered to be responsible for the puzzling phenomenon that my colleagues had brought to my attention, as captured in the prologue of this work and wanted me to explain. I tried to discuss these assumptions within the auspices of my frameworks in an attempt to interrogate how each was linked to observed artefacts and espoused values. I noted two abstract assumptions that I deciphered about UBY at NHS. Through an extensive discussion I tried to present the nature of UBYC as observed in life sciences at NHS. In the next chapter I tackle the third research question - How does UBYC influence the teaching and learning of life sciences at NHS?

CHAPTER SEVEN

INFLUENCE OF UBYC ON LIFE SCIENCES EDUCATION

7.1 INTRODUCTION

This chapter addresses the third research question which was: how does UBYC influence the teaching and learning of life sciences in life sciences classrooms at NHS? Deciphering UBYC involved witnessing it being enacted in life sciences classrooms at NHS. Observed UBY enactments within Schein's analytical framework constituted UBY artefacts which were captured in chapter six as UBY in action. Gathering UBY artefacts during data collection also involved witnessing how they were influencing the teaching and learning of grade eleven life sciences. With Schein's (2004) notion of culture as basic assumptions, it follows that the third research question sought to explore how aspects of UBY tacit assumptions influenced grade eleven life sciences teaching and learning at NHS. Even though this chapter focuses solely on UBY and UBYC influence on life sciences teaching and learning in Mrs Moosa's and Ms Perkins' classes, a systemic appreciation of organisational culture remains fundamental. The implication here is that the exploration in this chapter is not meant to attribute the power of causality solely to UBY and UBYC but focuses on them as part of the whole that co-constituted the grade eleven life sciences classrooms at NHS. With this understanding, this chapter explores how assumptions held by UBY, as one of the organisation in the micro-setting, influenced teaching and learning of life sciences in the two classrooms studied. Assumptions held by UBY will be examined in the light of how they influenced the classroom dynamics, based on evidence from my encounters with the life sciences teachers, UBY, archival material and personal observations, as captured in chapters five and six. Exploration of UBYC on life sciences teaching and learning follows the thematic approach used in the analysis of UBYC assumptions, that is, it will show how each of the assumptions of UBYC influenced life sciences teaching and learning at NHS.

Before I proceed to focus on how the nature and specific aspects of UBYC influenced the teaching and learning in life sciences classrooms at NHS, I believe that it is important that I briefly present UBY enactments in these social fields. Some UBY enactments have already been highlighted in chapters five and six. In chapter five some of their artefacts were captured as I described observations in the classroom and in chapter six as I described UBY artefacts under the heading - UBY in action. Before addressing how each of UBY basic assumptions influenced teaching and learning I present a synopsis of UBY artefacts in grade eleven life

sciences classroom at NHS. UBY enactments I present in this synopsis were gleaned from the teachers' narratives and archived documents that I collected from the UBY learner files kept by the school. In this synopsis I begin by presenting UBY enactments as captured in the teachers' narratives after which I present one statement of events that seemed to encapsulate UBY enactments in life sciences classrooms at NHS. Other than for the sake of quickening to memory UBY enactments presented in the preceding chapters it was my view that presenting UBY enactments at this point would triangulate presentations and representations made in the preceding chapters. This synopsis was also meant to foreground the UBY enactments which were the essence of how UBYC influenced the pedagogic setting.

7.2 UBY ENACTMENTS ACCORDING TO THEIR TEACHERS

In her narrative Ms Perkins related her experiences with UBY as she posited:

They are noisy – loud speaking, boisterous and over exuberant, inside and outside the classroom. To me this translated into a 'showing-off /attention seeking behaviour', very different from the quiet, controlled and respectful behaviour enforced in my upbringing and taught in the White and (I suspect) Indian schools. Having to 'bat' (term used at NHS for overseeing a class in the absence of another teacher) an isiZulu class is the worst, how do those poor IsiZulu teachers cope?

Black learners do not achieve as well academically. Discipline and motivation are lacking. Of course there are outstanding exceptions in each grade, but generally they don't compare to their Indian and White peers. Many staff express fears about the school's increasing proportion of Black children (now at about 75% in the lower grades). Parents of White and Indian children do not enrol their offspring here, even though they live locally. I mean, even the principal is Black, so no wonder there is drug-taking, a lack of discipline, poor results, etc. However, one Black parent who happens to be a staff member felt it was the quality/ class (?) of Black learners that is the problem: This school is letting in too many of these Township kids, they are rubbish.

When reprimanded, Zulu (Black) children used to go quiet and some sulk. Today they tend to react with outraged denial (learnt from the Indian and White children?) I remember the White boys generally dutifully turned up for detention when required. With the coming in of Indian and Black children, learners have to be fetched, as they often just run away.

My own difficulties with understanding and teaching Black learners seems to have reached a climax this year. My predominantly Black Gr 12 class were disappointed to lose their grade 11 teacher (their –'father' –a Black male teacher) and get me as their life sciences teacher. I am White and female – though they denied this had much to do with it (– I wonder?) and I did not know how to teach! At first they refused to do any work, even refused to listen. With much persuasion and reasoning things have improved, but still many refuse to even try. To force them to study I have resorted to tests after each completed section, but still they achieve such poor marks. Problems: some still have not bought books with notes and worksheets. They talk continuously in class and in tests they complain bitterly at the start, try very hard to crib answers from others answers and soon give up, often without completing the test. Most of them are very lacking in the 'culture of learning' and are quite defiant and disruptive. Reprimands and punishments seem to escalate the problem.

If they are to have a chance of passing this year, I will have to stop their bunking and late-coming to class. Their attention span is only two-three minutes then they are talking again! This has to improve. Reprimands and threats of punishment are greeted with angry outbursts of defiance and denial by a few of the learners.

I have come to the conclusion that most of them are afraid to try; they expect to fail, having low self-esteem academically. They adopt an ‘I don’t care’ attitude to “save face”. Supporting my conclusion, in a recent test three different learners on three separate occasions asked me to move on and not look at their work or hastily covered it as I approached. I asked one girl why she was hiding her work from me; had someone laughed at or mocked her work, I asked? “Yes”, she replied, “often, cos the answers are not right”. There seems to be a growing culture of “cribbing” in the school: during tests, of homework exercises and assignments – often the entire exercise copied, verbatim. And some are quite content to have their work copied. I think they feel they are helping, and I am struggling to make them understand that they are disadvantaging the person copying as he/she ceases to try and/or will never be able to gauge what they themselves are really capable of (Ms Perkins, Autobiography, 19th February, 2014).

Mrs Moosa in her life sciences classroom also witnessed and experienced UBY in action and she related her experiences in her narrative. The following is an excerpt from her narrative:

I wouldn’t say they are difficult... more along the lines of challenging. They have 2 advantages, you see (1) Their mother tongue and (2) they all look the same (sorry!). The learners hold conversations in Isizulu during class times and ignore your instructions after you have given them or reprimanded one of them. They will mutter something in IsiZulu and then the rest of the Black learners would start their chuckling and giggling. This really tests your patience as a teacher (going back to my point above... they are challenging). There doesn’t seem to be any way that you can get through to them. It is not that they are stupid, deaf or dumb; it is the simple reason that they just don’t like being told and dictated to by a person of another colour. I stand corrected! I say this from my observation here at school. We have five Black educators and we have seen the respect and manner the same insolent, rude and disruptive Black learners give to these Black educators. Somehow these learners feel that the Black educators can understand them or know where they are coming from. Maybe it’s true, maybe it’s a human social- bonding- aspect thing, where we feel that the people who look like us, are from the same community will somehow understand us and be more patient with us. But anyway, NHS has taught me a lot as much as I have come here to teach, I have also been taught (Mrs Moosa’s autobiography, Friday, 21st of February, 2014).

The descriptions captured above from Ms Perkins and Mrs Moosa were from their extensive interactions with the UBY in and out of the life sciences classrooms. In the next section I present what I came across as I analysed UBY files at the administrative office.

7.3 UBY ENACTEMENTS FROM THE ARCHIVES

In the statement of events below I present a report written by Mrs Moosa on the 24th of January, 2014 prior to data collection and had been placed on the concerned UBY files as a permanent record. Mrs Moosa wrote this report as one of the UBY had made an allegation to Mr Xaba that she had assaulted him. Even though the four UBY involved in this incident were not part of the ten that participated in dialoguing I decided to include this statement as it captured how widespread UBYC was, as well the extent to which UBY enacted. I believe this

statement would cast a more illuminating portrait of how UBYC influenced teaching and learning, an aspect which confirmed claims made by the teachers above and what I observed in the classrooms. Below is part of the report, I have left out the remedial part of it as it seemed not relevant to the scope of this discussion.

Gr 11 Life Science Class

1. PHEZUKU SIVE.
2. LONWABO MTHEMBU
3. LINDANI MTHEMBU
4. SIZAKHELE MNGUNI

The above boys were locked outside during Life Science lesson. PHEZUKU SIVE and MTHEMBU LINDANI got into the class on time and they went outside without my permission and came back after 10 minutes. Lonwabo and Sizakhele, they did not

get into the class on time. As I was teaching they started chaos, while they were outside by throwing their skulbag through the window that was opened. I told the learner to throw back the bag because what they were doing was disrespectful and disruptive, they kept on throwing the bag inside and I was furious, my lesson was disrupted and wasted. I opened the bag and threw out every book that was inside, to show my them that I was angry. while they were still outside, one of them threw in water by that same window, as the result some of the learners were all over the class trying to run away from water. I opened the door and asked them, and they said it wasn't them, it's some learner but Lindani had a bottle of water in his hands. Sizakhele asked me why I threw his exercise books, I asked him why they disrespected me like that by throwing bag and water while I was teaching, we kept on arguing and he said I must "Get loss". Phezulu managed to get into the classroom and I did not know how but it because now learners were chaotic and I didn't notice. I asked him to get out, he refused and he told me he's not going

anywhere because his parents pay the school fees, He kept on "backchatting", I went straight to where he was sitting and touched him in the shoulder asking him to get out. I was angry, the he got out, my lesson was disruptive, chaotic and wasted like that!

Figure 7.1 Mrs Moosa's statement

The synopsis above provided a glimpse of how UBY operationalised UBYC in grade eleven life sciences classrooms at NHS. As alluded to earlier, the presentation of these observations was made in an attempt to show the classroom reality that UBYC structured. However, from my analytical framework, cultural attributions cannot be drawn from such superficial manifestations. With this understanding, attempts to address the third research question had to link these superficial manifestations to deeper more enduring constructs. Making such a link involved foregrounding these manifestations in the nature of UBYC and its basic assumptions.

7.4 INFLUENCE OF UBY ASSUMPTIONS ON TEACHING AND LEARNING

In this section I explore how deciphered UBY basic assumptions (chapter six) may have influenced life sciences teaching and learning classrooms at NHS. I use themes for UBY assumptions from chapter six and for each assumption an attempt was made to interrogate how it influenced the teaching and learning of grade eleven life sciences at NHS.

7.4.1 The influence of assumptions about social identity on teaching and learning

The assumption held by UBY about their social identity was that they had a superior social identity premised on assumed privilege and advantaged. From deciphering this basic assumption it implied that UBY believed and functioned with a superior social identity. This superiority complex was captured in the following statements made by UBY which also provided evidence of how a UBY assumption, about social identity, influenced the teaching and learning of life sciences at NHS:

The thing is in our case the teachers don't teach us properly, they can't even pronounce the words, so especially for us Blacks, how will I learn if she can't do it on her own. And we start to struggle that's why the work is not done. The thing is, learners in the school, especially in my class we play, because we are not doing anything. And the teacher cannot even control the class and even us we fail. She can't tell us to keep quiet, she can't dominate the class. So the learners are the ones who are dominating the teacher. The teacher has lost control. (Flambo V, dialogue 16th May 2014).

In this statement, UBY, by highlighting the teachers' purported weaknesses placed themselves on a higher pedestal. Perched on this pedestal of assumed superiority UBY claimed to know what was needed and attributed their failure to incompetent teachers. By ascribing their failure to the teachers' alleged weaknesses, UBY affirmed their capacity to succeed. Such a view was premised on the assumption that UBY held a superior social identity. From chapter six it was observed that not only did they express this fictive superiority over their teachers but also on life sciences as one of their curriculum subjects. The statement made by Big-Man as he related his experiences in the life sciences classes affirmed my latter assertion.

Life sciences is another subject, I don't wanna say it's difficult, but it is difficult. This year we have a new teacher (Ms Perkins) and she makes me sleep, every lesson she makes me sleep. It's hard just sitting there and looking at the words. But I think we will manage... I will study next week and schedule how I will study life sciences (Dialogue, 15th May, 2014).

Through statements like Big-Man's, UBY affirmed their superiority over their teachers in the manner they disparagingly referred to them. According to UBY, their life sciences teachers were inferior, could not teach properly, couldn't pronounce English words, and had no control over their classes. In other words, UBY were claiming that they (as well as other learners) were now in charge. So underestimated were the life sciences teachers by UBY and loathed were their teaching approaches that Big Man posited that the teachers were not worth listening to and therefore he disengaged and slept. By describing their teachers in manner they did, and by opting to sleep, Flambo V and Big Man affirmed their superiority in intelligence over their teachers. This superior intelligence' existence was further confirmed when Big Man remarked that he was going to go it alone and make himself pass. This demonstrated the extension of his superiority to life sciences as a discipline, by believing that he could manage to sleep through life sciences classes and still manage to pass without the teacher's facilitation. Superiority of UBYC and trivialisation of life sciences was also interpreted when UBY took their phones out, chatted or even did homework from other subjects in the life sciences classroom. These enactments were directed at the teachers to indicate to them that UBY were more superior or as they regarded themselves smarter and above what the teachers wanted to enact in the life sciences classroom.

The assumption held by UBY about their social identity influenced the teaching of life sciences in that it caused the enactment of UBY agency as disengagement from the subject matter. This disengagement had a dual effect on the teachers. Firstly, it frustrated them and secondly, it affirmed their negative assumptions about UBY as being lazy, afraid of academics and not being assertive enough for life sciences. Evidence of frustration, was observed in those

moments when Ms Perkins lost it and in knee-jerk reactions deployed strong-handed approaches, to which UBY reacted defiantly, an interaction which generated a vicious cycle. The influence of this vicious cycle on learning opportunity was negative and restrictive as it disrupted the teaching and learning of life sciences at NHS. Disruptions due to agentic enactments of disengagement on grounds of superiority resulted in learning time loss. The ripple effect of time loss extended to pedagogy as life sciences teachers then compensated for time lost by using drilling methods – hence Ms Perkins and Mrs Moosa would only ask for them to sit and listen as they dispensed what they regarded as fundamental knowledge necessary for life sciences learners to pass the examination and tests. In adopting such approaches, life sciences teachers compromised the provision of high quality instruction and meaningful pedagogy that would have provided enriched learning opportunities for all learners. Such approaches made UBY sleep more and the cycle continued. This was the manner in which UBY assumption about their social identity influenced life sciences teaching and learning. Closely influencing life sciences teaching and learning in a related manner as the assumption about their social identity was their assumption about power.

7.4.2 The influence of assumptions about power on teaching and learning

UBY held the assumption that they had the power to do as they pleased. They held the notion that they had unlimited agency. In the discussion on the nature of UBYC, the nature of this power and its operationalisation were highlighted. As captured in Mrs Moosa's statement of events captured above, UBY operationalised this power in diverse, unpredictable and overt ways in the life sciences classroom. From Mrs Moosa's statement and observed enactments, power operationalisation included: coming late for class; back-chatting the teachers; missing classes; sitting as they pleased; refusing to comply; talking behind their teachers, deciding to do other work in the life sciences lesson; and speaking in isiZulu in the presence of a teacher who could not speak the language. On speaking in isiZulu, it is important to note that for UBY the operationalisation of power was not in the language per se, but the intention of demonstrating that they could do what the teacher could not do, an aspect which I interpreted was meant to induce vulnerability in the teachers.

From Mrs Moosa statement of events power operationalisation by UBY is observable as well as how this operationalisation influenced the teaching and learning of life sciences. The statement also illustrates the vulnerability of teachers who are oblivious of the manner in which power is operationalised by UBY. Artefacts of power as enacted by UBY that could be

identified from this statement included: the power to come into and leave classroom as and when they pleased; power to listen and learn; the power to disrupt teaching and learning; the power to subvert the teacher's authority and the power to question and exercise their voice. The operationalisation of power by UBY in life sciences classroom at NHS resulted in enactments that were not supportive of their success in life sciences.

The UBY assumption about power like notions of superiority influenced life sciences classrooms negatively mainly due to lesson disruptions. Such disruptions arose from the two ways in which the life sciences teachers responded to the way UBY enacted their power. In the first way, Ms Perkins and Mrs Moosa would fight back, as in the incident cited above. The teachers would fight back to re-affirm their power and authority in the classroom. In such instances Ms Perkins would scream and "handle them wrongly" (Interview, 21st May, 2014) as she tried to enforce a passive-receptive posture in all her learners. Attempts by teachers at re-affirming their power gave rise to corporate or highly structured life sciences classrooms in which UBY were now expected to be quiet, focused and solely attend or respond to the teachers' verbal discourse. In this case UBY and all learners only spoke with permission from the teacher. The consequence of this approach was that pedagogy became highly structured and inhibitive and the teachers' pre-occupation became that of control and the dissemination of a specific amount of information which learners were expected to regurgitate in assessments. This latter was evidenced by Ms Perkins as she posited "they still gotta get that goal... writing it out, answering worksheets, rote learning, whatever, as long as they can regurgitate it onto the paper the way it is required" (Interview, 21st May, 2014). As claimed by Big-Man, it was in these circumstances that UBY slept or passively disrupted the lesson by engaging in other work or they would disregard the teachers' instructions as they continued conversing. In these instances the teachers informed by their own assumptions of power tried to forcefully enforce UBY compliance to their dictates and expected conduct. These are the moments when power confronted power as UBY would step up and fight back. In enacting this way UBY as informed by UBYC disrupted both the teaching and learning of life sciences.

The second way life sciences teachers responded to enactments of UBY power was total capitulation. It was my observation that the teachers' capitulation was largely due to frustration with their inability to enforce compliance. When frustrated, the teachers would let UBY do whatever they pleased whilst they continued to teach the front row learners. This response was observed during classroom visits and was confirmed by UBY during dialogues. Ms Perkins would focus on the front two tables and totally ignore the last two. UBY who happened to be

occupying these tables would engage in other activities that had no relevance to the learning of life sciences. There seemed to be mutual agreement that one party would stay off each other's back or sphere of power. Even though Ms Perkins argued that at least in the latter way peace was maintained and she managed to do some work whilst she kept herself on their (UBY) good side, reality was learning had been disrupted in her classroom as the classroom got partitioned. Thus, either way expressions of UBY and concomitant behaviours directly and overtly interfered with the teaching and learning of life sciences at NHS, with UBY being the academic casualties.

7.4.3 The influence of assumptions about relations on teaching and learning

There are two UBY assumptions that are to be considered in this section under the theme the influence of assumptions about relations on the teaching and learning of life sciences. The first assumption was that for UBY relations mattered or took precedence over anything else. The second assumption was on life sciences and life sciences teachers where care mattered more than knowledge of life sciences. Convergence of these assumptions lay in the fact that these two assumptions determined what UBY valued and were willing to engage with. Contexts and individuals they identified and closely associated with, were highly regarded and valued more than academic success and individual glory. Conversely contexts and individuals that they couldn't identify with or were not closely related to were devalued and trivialised. UBY assumptions about relations were important as they determined the nature of communication and interaction in the life sciences classroom. Below I present some artefacts that captured the way these two assumptions influenced the teaching and learning of life sciences.

In the first artefact, Top Dog highlighted how relationships were central to UBY and life sciences teachers' engagement:

Sometimes it's just that the wrong teachers speak. Like I just said, there are teachers we like and there are teachers we don't like. So if we get told (taught) by the same teacher we don't like that will just like get in through this ear and out through that other ear. (Interview, 2nd September, 2014).

Responding to why they slouch and sleep in the life sciences classroom class UBY remarked:

We need a teacher that teaches properly... Ms Perkins, she talks and talks and you become sleepy. And Mrs Moosa she can't pronounce words clearly, that's the problem, we need a teacher that's energetic, because me I have a lot of energy, that's why I need a teacher who is energetic. (Magic, Dialogue, 15th May 2014).

The problem here was not teacher talk, as confirmed by Just-Lungi (Dialogue 20th May 2014) UBY were good at talking and talked a lot. Her plea rather was if they would only be allowed to talk in response. She remarked “we love to talk. If learning was like talking it would be better, we would be getting As (distinctions)”. What emerged from UBY remarks was that what made them sleep was not teacher talk per se but rather the inhibition of their UBYC propensity for conversation. This realisation absolved teacher-talk as responsible for their sleeping but rather the denial of a chance to be part of the discussion. This aspect was further confirmed by Big Man, “you see if you and I were talking about life sciences the whole day, by end of day I will be knowing what I’m talking about...if you come in and we just talk, we get better understanding by talking than just you talking” (Big Man, Dialogue, 20th May 2014).

In concurrence with Big Man on the centrality of talking, Cool-Guy explained what constituted talking and identified the missing dimension in life sciences instruction at NHS Cool Guy in the same dialogue posited:

We love arguing / debate. We can argue the whole day. But we don't argue in life sciences because we know we don't know, so we are wrong. We argue about what we know. So if we knew it we would argue (all concurred and affirmed with nods) (Dialogue, 20th May, 2014)

Sentiments of UBY in the statements above registered and confirmed their desire to verbally engage with their life sciences teachers. They did not want Ms Perkins and Mrs Moosa to do all the talking. They longed to actively communicate with their teachers. On interrogating why UBY wanted a conversational atmosphere in the life sciences classroom, within the CRP framework, I interpreted that it seemed for them active communication meant a relationship, in other words, captured within the statements above was an UBY longing for a care-based relationship with their life sciences teachers. The fact that UBY were realising that they could not debate in the life sciences classroom removed them the arena of conversational probability, a position they found disenchanting and disaffecting, and so they slept.

UBY responses to the question, why they did not ask questions in the life sciences classrooms also highlighted the centrality of relationship in the teaching and learning of life sciences at NHS. They had the following to say: “We don't (ask questions) because they don't pay much attention to us anyway” (Top Dog, dialogue 15th May 2014). In the same dialogue Cheeky Lwa was of the view that asking questions was not a good idea and she “would rather ask Shy Girl than the teacher” (dialogue 15th May 2014). Thus, the disengagement of UBY as noted by their life sciences teachers emanated from them not being in rhythm with their teachers and resultantly identified and valued fellow UBY more than their life sciences

teachers. This disengagement and valuing their friends more, meant that for UBY it was more satisfying to sit at the back and ‘upload’ instead of listening to Mrs Moosa and Ms Perkins. Thus, the teaching and learning of life sciences did not ideally take place as envisaged from the conceptual perspective of culturally relevant pedagogy.

In my second interview with Ms Perkins I asked her what learners' cultural aspects she considered as she taught life sciences. Her response below captured the essence of how she conducted instruction in her classroom as well as captured UBY response to it and her explanation for the UBY response.

Definitely, when you are in a big class you don't know what to do. It's not so much of a racial thing some children prefer to tune in and listen. So you can lecture and they are very much part of it and you can tell by their concentration. And you look up and the back rows have all put their heads down and gone to sleep (Black learners sit in these rows). It was too much, the talking just got over their heads, they need to be actually doing something with their hands for example, writing to actually participate otherwise they blank out completely. Generally, dare I say it, I don't know if they are tired but if you talk too much they literally close their eyes and go to sleep. But maybe it's because we woke up at four this morning trying to catch the bus (Interview, 21st May 2014).

UBY responses in the artefacts captured above and as confirmed by Ms Perkins attests to the persistence of their two assumptions about relations. The absence of conversational communication between UBY and their teachers made their interactions in the life sciences classrooms assume highly structured and formalised interactions, in which UBY enacted their agency by sleeping. In such highly structured classrooms there was strict decorum characterised by speech formalism and euro-centric etiquette. For example, UBY could not interject as the teachers spoke or when other learners were responding as observed in our co-generative dialogues. In the highly formalised classrooms, interjections constituted noise or shouting: - trying to engage in a debate with them constituted a quarrel and was tantamount to arrogance and indiscipline, hence a level one and two punishable misdemeanour according to the NHS' Code of Conduct. As UBY tried to sit next to those that they had stronger ties to, the teachers regarded it as cliquing and would ask them to go back to their seats. As they chatted whilst they did the practical or whilst taking down notes the teachers' call was for them to focus or they risked failing. As they set the stage for the practical through uploading, Ms Perkins cautioned them against time wasting. Finding themselves in such an untenable situation in which UBY could not debate, argue, interact, or even ‘spend’ their energy whilst faced with threats of sanctions, UBY slept. My interpretation from these observations and dialoguing was that sleeping for UBY was not an escape from a hostile environment but an affirmation of their assumptions about relations, life sciences and their life sciences teachers.

The fact that relations mattered more than anything else in the life sciences classroom and the nature of relationships UBY had with their teachers meant that for them, the teachers and the life sciences they taught was not important and were therefore devalued. UBY devaluation of the discipline and their teachers, superimposed on the assumption that care mattered more than the knowledge of life sciences, rendered life sciences unimportant for UBY and they disengaged from it. Devaluation and disengagement therefore created a teaching and learning context in which communication and fluid interactions became difficult. As UBY slept, bunked or engaged in other activities not associated to life sciences like sharing their phone contents teaching and learning was negatively influenced.

One positive thing which reflected the teachers' professionalism and an acceptance of their professional responsibility was that they acknowledged the persistence of UBY disengagement and disenchantment in their classrooms. As a remedy to these diagnosed problems, Ms Perkins came up with tests and threats of tests as a teaching and learning tool. In the statement below Ms Perkins described and explained this intervention strategy:

One thing I have changed is they write less, but I think that has more to do with the syllabus. I get them to write less and give them their notebooks and test more often, because we (UBY) don't take any work seriously unless it's for marks. So now I call all my work sheets 'tests' in trying to get the best out of them because if it's gonna count, then they will do better, try harder, that's why and how I'm coping everything is a test. It doesn't matter how small it is (Interview, 17th April, 2014).

The tragedy of these initiatives was that as much as Ms Perkins meant well, tests and threats of test further regimented learning and made the classroom structure more restrictive if not punitive. Such a classroom structure sustained UBYC as it was the anti-thesis of the dialogical and communal approaches which UBY preferred and when these tests were being administered in a context in which UBY were failing academically.

Affirmations of UBY assumptions about life sciences and their teachers negatively influenced the teaching and learning of life sciences in that through their disengagement from life sciences, their participation in class activities became limited, a context which compromised their learning opportunities. As they failed to learn and refine their ideas through talking and debating, UBY became alienated from the subject, hence it was not a surprise that they acceded to failing the tests during our dialogues. Failure of tests had a negative unintended influence in that as UBY failed the tests, their willingness to transact positively and actively in the life sciences classroom was being gradually expunged and they began to enact in ways which were non-supportive of learning for example, the tendency to cheat or copy during those

tests, as was mentioned by their teachers. Some started avoiding those tests by missing class altogether and would try to write during the next class when they would have uploaded the test from their peers. All these enactments limited their learning opportunities, frustrated their teachers and generated a highly conflicted teaching and learning environment.

The failure of UBY to pass the tests, as presented in chapter six, also led to them feeling more alienated, which reduced the likelihood of communal pedagogical practices in the life sciences at NHS. This alienation made it almost impossible to have mixed-ability groupings during practical work as was observed on the 9th of May. UBY formed their own groups and worked at the back as they chatted in IsiZulu whilst the front rows held their individuated space and worked from there. Thus, polarisation of the life sciences classroom space inhibited the possibility of Ms Perkins and Mrs Moosa using more learner-centred, co-operative approaches, thus, the life sciences pedagogic setting remained teacher-dominated. This reality was untenable for both the teachers and UBY as the continued use of transmission approaches used by Mrs Moosa and Ms Perkins was adjudged by UBY to be pedagogically sterile. Lack of creativity and dialogical engagement in delivery sustained UBY assumptions and as the UBY enacted teachers became even more frustrated. Such a situation affirmed UBY assumptions as they enacted life sciences and the teachers were further devalued as they disengaged. As they retreated to their groups at the back they disparaged both the subject and the teachers, and whilst doing so limited their learning opportunities in the life sciences classrooms.

With regards to relations with their teachers, UBY also held the assumption that they were treated differently and unfairly. During the dialogues UBY clearly pointed out that their life sciences teachers did not pay much attention to them; picked on them; meted out sanctions selectively with learners of other race groups being allowed to get away with it and the teachers spoke and thought negatively about the UBY. UBY assumptions about how life sciences teachers viewed and treated them came across as the most emotive and important for them. It seemed all the other assumptions radiated from the notions of being treated differently and unfairly. Top Dog's experience below captured UBY experience upon which this assumption was premised and how UBY enacted as informed by the assumption of being treated differently and unfairly.

It's like I feel we are just seen as, I don't know (agonising on a description but contorting his face symbolising pain)... You know when you are misunderstood in the school it makes you feel like you are (fails to put it into words), when you do that (acting up), like when you make some of those actions, sometimes it makes you feel 'better'. It's the only way. Sometimes it just makes you feel better. Because 'we' are tired of being /feeling misunderstood. Like, like are seen as

'animals' basically, that's how we actually feel. We are always the 'number one' suspects, no matter what (Interview, 2nd September, 2014).

The notions of being treated differently embedded in the UBY assumption about being treated differently and unfairly as described and explained by Top Dog in his synopsis of his life in the life sciences classroom at NHS served to capture how this assumption influenced life sciences teaching and learning.

Feelings of marginalisation and disenchantment in words and deeds affirmed the assumption that UBY held about issues of equality and equity. As a result of such feelings UBY professed desperation and discouragement in the life sciences classrooms at NHS. They felt disenchanting, constrained and alienated. Within the conceptual framework of intrinsic motivation regardless of power all humans have a desire to feel connected. Thus, these feelings of disenchantment, desperation, alienation and discouragement took place against a background informed by UBY assumptions of power and superiority. This internal contradiction created a situation in which UBY had to transcend their vulnerability and reaffirm their power as indicated by Top Dog when he talked about “doing or acting like that”. Thus, acting or doing that served as a mechanism to reaffirm themselves. Such actions included total disengagement as UBY came to class and sat at the back and waited for the bell for the end of class. Having positioned themselves this way, UBY in Ms Perkins and Mrs Moosa's classrooms neither asked nor responded to questioning during the lesson. As they sat at the back they chose not to interact with the teachers or their peers in the front rows. In this state of disengagement as UBY made a deliberate and conscious effort not to engage with the teachers, by default they had also chosen not to engage with the content. Choosing not to engage with the content on the basis of the assumption that care mattered more than content, greatly limited UBY learning opportunities.

Feelings of being treated differently seemed to catalyse disruptive enactments in the life sciences classrooms. One way that UBY thought they could show how they felt about their disenchantment, whilst recouping their sense of competency was to operationalise their power in recognisable ways. This operationalisation of power involved UBY becoming more aggressive and defiant to their two teachers, sometimes without the teachers having done anything to warrant such spectacular displays of power. As they spectacularly displayed their power to the life sciences audience, UBY deliberately frustrated their teachers. Through these spectacular displays of power, teaching time and the teachers' professional passion seemed to have been expunged, as can be captured in their narratives on their experiences with Black

learners. Disrupting the life sciences classes thus, served as a way of re-asserting their superiority and power over the teacher like using their electronic gadgets in the classroom to which the teacher was expected to respond as a matter of policy. As the teachers responded they would taunt them and address them disparagingly. It therefore emerged that, as informed by UBYC both disengagement and disruption negatively influenced teaching and learning. In choosing not to engage with the content but with the teacher, life sciences content remained uncharted territory and they failed the tests. This failure seemed to galvanise them to perform further, a dynamic which the teachers tried to counter through more restrictive classroom structuring. The teachers' response further sustained UBY notions of being treated differently and limited both teaching and learning opportunities in the life sciences classrooms at NHS. Thus, the assumption about being treated differently and unfairly scaffolded UBY alienation from both the life sciences content and their teachers as well as their academic success.

7.4.4 The influence of assumptions about success on teaching and learning

The last assumption held by UBY that seemed to have influenced life sciences teaching and learning at NHS was that of success. For UBY success was materialistic and not equivalent to educational attainment. This assumption was at odds with espoused values at NHS and those of UBY life sciences teachers. Thus, this assumption positioned UBY diametrically opposed to the system they were supposed to benefit from. Having positioned themselves thus, UBY, through the assumption that they held, life sciences teaching and learning was negatively influenced.

The influence of this assumption emanated from the way in which the nature of success was conceptualised by UBY. From the materialistic dimension the implication was that for UBY, success was both materialistic, hence quantifiable. However, what was noted in chapter six was that even though success was quantifiable it also had a qualitative dimension and intricately connected to relational assumptions. People valued by UBY were considered successful not necessarily because of material possessions. In these cases, success for UBY was synonymous with popularity and clout. This symbolic and qualitative conceptualisation of success was confirmed by Flambo V when he expressed that success in school meant, "leaving the school with a name and all teachers knowing that I was a good guy, even the learners. Such that when I come out of school it will be like here is this cool guy" (Dialogue, 20th May, 2014). Hence, leaving a legacy constituted success for UBY, regardless of what legacy.

What was explicit from dialoguing was that for UBY, success was not equated to academic excellence. Despite academic excellence not being a measure of success, academic achievement, however, was still considered as an indicator of success. It was from this understanding that UBY would talk of passing at sixty percent or for Naughty-by-Nature just achieving fifty percent. Four aspects of success therefore emerged from UBY assumption about success. Firstly, success was quantifiable; secondly, it could be symbolised; thirdly, it could also be qualitative; and lastly it was not necessarily determined by academic excellence. These four aspects of success seemed contradictory, but such was the complexity of UBYC.

UBY assumptions about success through the four aspects mentioned above influenced the teaching and learning of life sciences at NHS through the ways in which the four aspects informed agentic enactments. The fact that for UBY success was quantifiable meant that their test outcomes carried meaning which they could interpret. From test marks they could ascribe failure to themselves, a realisation which made them institute enactments to affirm their competency. This aspect of success for UBY elicited enactments that were contrary to Ms Perkins view that UBY were not concerned with marks as captured in the statement below:

They value the marks, Indian children particularly, they want to know everything that's kept...you have lost me one mark there (holding up a page), why didn't I get that mark, they are particular...The Black kids on the other hand, flip their scripts and say Oh I passed and drop it or Oh I failed fine (shrugging shoulders resignedly)..They are not as concerned as about failing (17th April, 2014).

During the fourth dialogue, (15th May 2014) UBY demonstrated that they could quantify their performance in life sciences and could thus determine whether they were succeeding. UBY were aware of the difference between a sixty and ninety percent mark. Even though they were not espousing the value for the importance of the ninety percent they knew what it meant and how their marks positioned them. This ability to quantify success explained why UBY expressed resentment towards their teachers when the latter proclaimed that they were poised for failure. This ability to quantify success premised on the assumption that success was quantifiable explained UBY response when teachers made pronouncements that they were going to fail. UBY were clear about their emotions, which I felt influenced the teaching and learning of life sciences. Such emotions included feelings of being degraded and rendered hopeless. Such feelings were so overwhelming that UBY become numb that Top Dog was of the view that, for UBY “biology (life sciences) did not exist” (Dialogue, 15th May 2014). Life sciences ceased to be a subject constituting UBY curricula at NHS.

Top Dog's remarks were representative of the feelings of UBY in our dialogue and exposed how UBY's assumption about success influenced life sciences education in Ms Perkins and Mrs Moosa's classroom. Through quantifying their success or failure in this case, UBY realised how their marks from tests were a liability to their superiority complex and as such were regarded as disempowering. Disempowerment within the life sciences classroom triggered disengagement as expressed by Top Dog when he said, for UBY life sciences no longer existed as part of their curriculum and they were now doing six subjects instead of the seven. This remark was made despite UBY still attending life sciences classes. Thus, through this notion based on their assumption about success, UBY would physically attend life sciences classes but were intellectually estranged from the subject and such positionality limited their learning opportunities to a great extent. Ramifications of UBY disengagement were not restricted to the curtailment of learning opportunities but also negatively affected life sciences teaching. UBY disengagement from life sciences freed UBY agency and caused its hyper-enactment in other spheres of the life sciences classroom in ways that were not supportive of teaching and learning.

The fact that UBY held notions of a possibility of success in life without academics trivialised the academic enterprise. In the life sciences such a notion led to the devaluation of the life sciences teachers who were no longer regarded as custodians or embodiments of success as compared to sportspersons and politicians. Trivialisation of the subject was a manifestation of this assumption. Trivialisation manifested itself as UBY professed that they were not learning life sciences yet they were going to study and pass it even without the teacher as was illustrated by Naughty-by-Nature, "life sciences is too easy because it's just notes, there is no formulas, it's just notes. Notes that you can sit by yourself and study, that's what I do" (dialogue 15th May 2014). The effect of this trivialisation of the subject was UBY disengagement from the subject, an enactment which fuelled their propensity to disrupt life sciences teaching and learning. Through trivialisation they laughed at the failed mark. As a result of trivialisation UBY were prepared to walk out of the life sciences class instead of complying, yet still came back and sat for the tests. Through trivialisation, they masked Mrs Moosa and Ms Perkins through disrespect and defiance because being in the teachers' good books did not affect their path to symbolised success. In fact, standing up and defying the teachers made them popular, hence successful and pushed them a rung up the *food chain*. In these ways UBY assumption about success grossly interfered with life sciences teaching and learning at NHS.

Secondly, UBY assumption about success influenced the teaching and learning of life sciences through its provision for the symbolic representation of success in other ways which were not academic. Even though academics mattered more than the social for life sciences teachers at NHS, the converse was true for UBY. The ability to construct and reconstruct success through symbolism precipitated the carving of spatial caveats in the life sciences classroom in which UBY enacted their agency and affirmed their capacity to succeed. Sitting at the back, working on the Mathematical literacy assignment, social networking and standing up to the teacher seemed to have yielded the same emotional satisfaction as academic success. This existence of multiple ways in which UBY could demonstrate success gave rise to niches within the life sciences in which UBY participated fully. However, as UBY participated in these spaces teaching and learning was compromised. This compromise was brought about by UBY engagement in subversive actions which caused lesson disruptions. To become popular, UBY had to become notorious and the more notorious one was, the more successful they were regarded by their peers. However, as UBY became more successful through notoriety, limited teaching and learning took place in their life sciences classrooms. The irony of this dynamic was that success (through notoriety) was breeding failure (academic) as UBY failed life sciences tests and end of term examinations.

The last way UBY assumption about success militated against teaching and learning was inferred from UBY remarks that fifty percent and not ninety percent was enough for them. What I inferred from these remarks was that for UBY it was possible for academic achievement to matter with academic excellence not being regarded as an indicator of success. It seemed a contradiction, that UBY wanted to succeed in school but had reservations about excelling. This contradiction, I explained as power operationalisation through expressions of being in control and notions of self-determinism. The inherent contradiction in this understanding of success affirmed my view about the complex and dynamic nature of UBYC.

Assumptions about success made UBY value average academic achievement over excellence as was inferred from Naughty-by-Nature's remarks about not wanting ninety percent but just aiming for fifty percent (dialogue, 20th May 2014). With this notion all that UBY pursued in the life sciences became just a pass. By aiming for a pass UBY lowered the success barometer and were thus guaranteed success. Aiming for a pass became a strategy to affirm their competency. By lowering the bar and being guaranteed of success, UBY reduced the likelihood of failure and as such maintained their superiority complex in mediocrity. Lowering the bar also influenced the teaching and learning of life sciences as it allowed UBY

freedom to enact their agency in other ways as they could pass without being fully engaged. This view explained why UBY commented that they could get ninety percent if they wanted but they had other ‘important’ things to do other than just focus on life sciences and school work (Magic dialogue, 20th May 2014). Doing other things entailed enacting in other ways that did not expand their learning opportunities.

UBY preoccupation with just passing resulted in them being demotivated to exert themselves in the life sciences classes. Complete and total engagement would have implied motivation but aiming for a pass implied that they were still engaged yet their engagement was temporal, as such they did the bare minimum. Demotivation resulted in the life sciences classes being the last thing on their, to do list. Demotivation to excel also compromised the quality of work that was submitted to Ms Perkins and Mrs Moosa for marking because UBY knew that by doing the bare minimum minutes before submission dates they still would get away with a pass. Not striving for excellence made *uploading* more rewarding than intellectually setting the stage for the practical, as such UBY were the last to hand in their practical write-up in Ms Perkins classroom (observation 9th May 2014). In all these ways lowering the bar and not aiming for excellence premised on the assumption about success held by UBY worked against quality teaching and learning of life sciences at NHS.

7.5 DISCUSSION

As I discuss how UBYC influenced the teaching and learning of life sciences at NHS there are ideas that I believed needed foregrounding. Premised within an organisational culture framework, this study was never intended to apportion personal blame on any party within the grade eleven life sciences classrooms at NHS for the puzzling phenomenon observed. It was for this reason that the context and its role in informing the structuring of social structure and how the parties respond to it, were foregrounded in this study. The social imagery provided by Foucault and Bourdieu as part of my conceptual framework positions all parties in any context as equally agentic. Foucault’s notion of the multi-polarity of power positioned UBY as active agents endowed with the power to choose and enact. With this power they were endowed with Bourdieu’s capital and *habitus*. When this social imagery is super-imposed on the life sciences classroom, the teachers and UBY, out of many possible choices settled for the ones captured above. Though it may be easier to conclude that the life sciences teachers were the real source of the problems in the life sciences classrooms on the basis of not having structured the learning context in ways that were pro-UBY, there is need to realise that UBY had myriad choices, and out of many by virtue of the nexus of power, capital and *habitus* they chose enactments that

limited their learning opportunities. My point here is that an interrogation of how UBYC influenced life sciences teaching cannot be summed up in a single qualitative descriptor, for example, it influenced negatively or positively. Such a summary conclusion is simplistic and from the systemic nature of organisational culture negates the complex synergistic dynamic at play in the life sciences classroom. This discussion therefore proceeds broadly without any presumptions of linear causality, but attempts to explore how the parties colluded unintentionally in the construction of the social structure.

To understand how UBYC influenced the teaching and learning of life sciences in grade eleven classes at NHS there is need to juxtapose the culture with the context as structured by the life sciences teachers. This context was the ideal construct for teaching and learning as far as the teachers were concerned. To understand UBYC influence on teaching and learning the imperative is to assess its amenability to the context as structured by the teachers and how it positioned its participants in this context.

Findings from this study established the structure of the context which the life sciences teachers expected teaching to occur in, in a way that maximised learning opportunities for all learners. The expected classroom structure was one in which conformity and compliance were imperatives for acceptance and functionality. Within such a context it was found that life sciences teachers at NHS expected their learners to follow instructions, communicate in an appropriate manner, ignore peer distractions when working, demonstrate good citizenry through participation in collaborative work, be appreciative of the privilege of being taught by them, recognise the authority of the teacher over them and accept the teacher as the final arbiter of the curriculum. These teacher expectations are consistent with those found by Lane, Wehby and Cooley (2006). To accomplish or facilitate the realisation of these expectations research findings in this study were that life sciences teachers structured classrooms in ways that emphasised discipline, highly-structured modes of instruction and non-negotiable learner conformity. The architecture of this context was similar to one which Gallagher (2000) characterised as manned by teachers preoccupied with epistemic emancipation as teachers believe their role was to help learners access fundamental scientific knowledge. What was tragic in the findings was that teacher expectations and their structuring of the context resonated strongly with anticipated learner skills that facilitated their capacity to teach and not necessarily the opportunity to learn. Another crucial finding with regards to understanding the context of the influence of UBYC on teaching and learning was that life sciences teachers at NHS, to an extent held different expectations for different learners. For example, from the teachers'

narratives Black learners were expected to work harder, conform more, complain less and be more appreciative. The question that arose from finding these expectations and confirming the existence of such a classroom structure was, what would have been the influence of the presence of participants in UBYC in the life sciences classroom? This question led to an interrogation of UBY expectations in the life sciences classroom.

From their basic assumptions UBY as participants in UBYC expected to be in control of their learning and learning environment; to have choice by virtue of their power; greater freedom in the life sciences by virtue of their superior social identity; to be treated with respect by their teacher due to their endowment with the power to learn and be co-creators of the learning environment; to be able to freely interact due to their communal habitus; to be able to multi-task by virtue of their time orientation; not to be judged on the basis of their academic performance as that did not constitute success for them; to be taught in creative and interactive ways due to their social identity which rendered them smart technological geeks; and to be treated equally and justly like all the other learners in the life sciences classroom. When UBYC as encapsulated within these expectations was superimposed over the life sciences teachers' expectations and the classroom structure they created a picture of how UBYC influenced teaching and learning in grade eleven life sciences classrooms at NHS emerged.

What clearly emerged from the findings is that there was a contradiction between UBYC and teacher expectations as embodied in the context. What then was the influence of such a contradiction on life sciences teaching and learning? The first finding was that teaching and learning in the grade eleven life sciences classrooms at NHS were socio-emotionally charged and within this charged atmosphere, teaching and learning were disrupted. In this interrogation of finding I used the term *disrupted* with a South African understanding of the term. I have not used the term *interrupted* which would have been the most appropriate because the term disrupted captures the actuality of how UBYC influenced the teaching and learning of life sciences at NHS. In a South African context disruptive enactments have been conceptualised as those that are inappropriate to the schooling context or militate against the realisation of the teachers' curricular expectations and in the teacher's view impedes lesson progress and interferes with learning (Roberts & Venkat, 2016). Within this conceptualisation disruption is uni-directional, caused by learners and negatively impacting the teacher. A closer look at disruption as foregrounded in the South African context reveals that it mainly affects teaching. The fact that UBYC was disruptive points to its oppositional stance vis-à-vis the structure of the context as co-created by UBY and other players in the life sciences classroom.

Consistent with this understanding of disruption both teachers at NHS consistently acknowledged negative UBY learner enactments as a recurring professional challenge. Also in confirmation of research findings in similar context the teachers registered concerns about the chances of their learners making it through the grade and their inability to provide high quality teaching and learning opportunities. Such findings parallel those of Noguera (2003).

An interesting finding was that neither the life sciences teachers nor UBY enjoyed or appreciated the context as it was. Unappreciative of the status quo, findings indicated that each of the parties, in their own way, were trying to improve the context. What the latter statement implies is that both the teachers and the UBY, through their enactments were hopeful that they could resolve their challenges and be able to teach and learn respectively. These findings extend studies on disruptive behaviour in South Africa (Marais & Meyer, 2010; Roberts & Venkat, 2016), in as far as acknowledging the persistence of disruptive enactments in classrooms. In this work the scholars focused on the nature and recommended strategies for managing disruptive behaviour. In Marais and Meyer (2010) as well as Roberts and Venkat (2016) studies, disruptive behaviour was investigated in terms of types and causes with a view of providing strategies for managing this behaviour. However, this study contrary to the behaviourist notion embraced in previous studies, placed observed disruptive enactments in a broader interpretive social context. Whilst Marais and Meier (2010) attributed disruptive enactments to socialisation gaps due to the absence of parents and role models, this study observed that for UBY disruption was by choice. It was my finding that UBY disruptive enactments rooted in UBYC were conscious and deliberate. UBY in life sciences classrooms at NHS chose not to: listen to the teacher, work in groups they had been placed in; come to class on time, comply with teacher instructions or focus and execute assigned tasks. Thus, rather than apportion blame for negative UBY enactments to the family and family values or lack thereof as in Marais and Meier's (2010) study, one of the major findings of this study was that UBY enactments were based on their own agentic choice sustained by UBYC.

With regards to manifestation of disruptive enactments, findings in this study were consistent with those obtained by Marais and Meyer (2010) as well as Roberts and Venkat (2016), which include disregard for teacher authority, verbal interruptions, off-task behaviour, insolence and serious disruptive behaviour that includes assault and open, direct aggressive confrontations. Whilst these scholars managed to identify these overt disruptive manifestations, this study managed to identify other subtle and deep level disruptive enactments. Such subtle disruptive enactments were masked as normal human or classroom enactment but the agenda

of their deployments was disruptive. Identified subtle disruptive enactments included fist-pumping at the beginning of the lesson, which was meant to delay the commencement of the lesson; slouching and sleeping meant to draw the teachers into an exchange; or asking interesting questions that were not related to the target concepts, meant to divert the teachers attention and focus from key deliverables for the lesson, to name a few.

Other findings from this study also included that disruptions that occurred in a socio-emotionally charged classroom. It was my observation and later interpretation that UBYC contributed to the co-creation of this socio-emotionally charged context. The significance of this socio-emotionally charged context was that it constituted a disruption propelling vortex, fuelled by misinterpretation of enactments. I regarded this vortex to be self-sustaining because it seemed to be operating with a positive feedback mechanism. Unless misinterpretation was minimised, the vortex seemed self-sustaining and self-propagating. The point I am driving at is that UBYC, more than other cultures in the life sciences classroom at a structural level co-created a volatile social structure that was not conducive for either teaching or learning. As established in this study the volatility seemed to arise out of what I regarded as cultural mistrust between UBY and their life sciences teachers.

Whilst local scholarly work has adopted a global approach in exploring disruptive enactments by attributing disruptions to learner enactments, in this study I tried to theorise disruption from a cultural premise in an attempt to better understand how UBYC was influencing teaching and learning. My interpretation therefore was that disruptions observed in the life sciences were bi-directional and constituted by three components. The triad consisted of the enactment, the consequence and the response, all interacting in a dynamic. After witnessing disruptions in life sciences at NHS, I noticed that global approaches which constituted uni-linear explanations of disruptions had shortcomings due to their normalised conception of disruptions as having a single source of causality. It was my finding that learner or teacher enactments within the charged atmosphere had consequences, which would trigger a response which in the context of disruptions prompted further enactments or reinforcing responses by either parties. For example, findings were that a negative enactment by UBY would generate frustration and annoyance in the teacher. Whilst this negative enactment caused negative feelings in the teacher, for the UBY it was positively rewarding to see the teachers in turmoil. In response to the negative enactments, life sciences teachers in a typical behaviourist response would deploy methods to stop UBY enactments, these in turn propelled UBY to escalate their negative enactments. As the teachers frantically tried to deploy mitigating

mechanisms they would neglect teaching. In this way the charged atmosphere due to the presence of UBYC, disrupted teaching. The same applied with enactments by the teachers, as confirmed by Mrs Moosa, reminding them where they were coming from or Ms Perkins, handling them wrongly, UBY would respond and as they responded, learning stopped for them. A significant finding from this was that both teachers and UBY were sources of enactments, hence disruptions. From my findings for UBY such enactments were deliberate, and unfortunately for teachers unaware of UBYC, their disruptive enactments were largely based on what Monroe (2006, p.161), refers to as misinterpretations. Another interesting finding was that disruptions arose from teacher or UBY responses and not their initial enactments. It is within the scope of such finding that CRP calls for teachers to develop competencies relevant to the cultural milieu they find themselves in to circumvent misinterpretation and effectively serve those learners culturally different from them.

7.6 CONCLUSION

This chapter sought to point out ways in which some aspects of assumptions held by UBY influenced the teaching and learning of life sciences at NHS. What emerged from this discussion was that UBY assumptions overtly and negatively influenced the teaching and learning of life sciences at NHS. Manifestations or enactments of the assumptions held by UBY produced behaviours that influenced the teaching of life sciences in three negative ways namely: devaluation, disengagement and interruption. These three technologies were deployed by UBY in life sciences classes at NHS in ways that were oppositional to teaching and limited the expansion of learning opportunities for them.

In the next chapter I tackle the last research question, which is, why does UBYC influence the teaching and learning of life sciences classrooms at NHS in the way it does?

CHAPTER EIGHT

EXPLAINING UBYC INFLUENCE

8.1 INTRODUCTION

Deciphering UBYC prompted an examination of how it influenced the teaching of life sciences at NHS, which became the focus of chapter seven. However, knowing how UBYC influenced the teaching and learning of life sciences did not constitute holistic understandings of UBYC, which created a need to explore why UBYC functioned in life sciences classrooms in the way it did, hence this chapter. Addressing this need, answered the fourth research question which was: why does UBYC influence the teaching and learning of life sciences in life sciences classrooms at NHS in the way it does? In pursuance of an understanding of how UBYC influenced teaching and learning, and cognisant of its influence as reported in the previous chapter (seven), this chapter was drafted in an endeavour to explain why UBYC disrupted or negatively interfered with life sciences teaching and learning in grade eleven classes at NHS.

My endeavour in this study was a better understanding of the puzzling phenomenon exhibited by some of their Black learners that had been witnessed by my colleagues in their life sciences classrooms at NHS. I envisaged after figuring out what the phenomenon was, I was going to be able to attend to the questions they posed for me in the prologue of this work, to enable them to better serve those they could not understand. Attempting to provide insight into the phenomenon, which I deciphered to be UBYC, required an interpretation of findings. According to Carspecken (1996) interpretation of findings entails grounding the research findings in existing socio-political theory in an attempt to explain why the findings were what they were. Using Schein's analytical frameworks and the conceptual framework of: intrinsic motivation, (Ryan and Deci, 2000); notions of CRP, (Lucas and Villegas, 2002); and the social imagery from Foucault and Bourdieu, UBYC needed to be theorised with regards to why it manifested and influenced the life sciences classrooms at NHS, in the way it did. It was my view that such an approach would adequately address the fourth research question and unravel the foundational aspects of UBYC. In the following sections I present this theory and use it to explain why UBY enacted in the way they did.

I begin by revisiting the cultural analysis done in chapter five and six by tabulating the assumptions held by the life sciences teachers as the chief structuring agents of the classrooms environment and UBY as the participants in UBYC. It was my view that juxtaposing the two

would facilitate a comparison of the two organisations. According to Senge (1994) in his treatise *The Fifth Dimension*, such a comparative view provides for the contemplation of the whole, a perspective he considers an epistemic imperative, as it allows expansive thinking and holistic comprehension of the fundamentals of the organisation. Thus, addressing the why question of this research needed a contemplation of the systemic connections between NHS, the life sciences teachers and UBY, with what was happening in the life sciences classrooms at the level of assumptions. Thus, such a juxtaposed systems perspective made the divergent assumptions clearer making it easier to comprehend why the teaching and learning of life sciences may have been negatively influenced at the level of tacit, deep and invisible assumptions. However, I need to emphasise that regarding the two components in parallel does not erase the fact that the basic assumptions held by each of the components constituted a unique web of meaning or mental model for each of them and explained their agency.

In the table below (8.1) assumptions held by life sciences teachers at NHS and UBY are presented alongside each other. Where possible I tried to present them thematically, that is, related assumptions adjacent to each other for easier comparison.

Table 8.1 Assumptions held by NHS, life sciences teachers and UBY

LIFE SCIENCES TEACHERS	UBY
Teachers had a superior social identity and human behaviour could be guided	UBY were privileged and advantaged
Black people were socio-economically poor and deficient	Their teachers treated them differently and unfairly
UBY had limited academic potential	Success was materialistic and not equivalent to academic achievement or excellence
Academics mattered more than the social	The social mattered more than academic endeavour.
Life sciences as a discipline and rationality mattered more than learner culture	Care mattered more than life sciences as a discipline
Teachers were experts- had expert power	UBY had power and were autonomous agents.
Human nature doing-oriented	Human nature being-oriented.
Teacher is the sole arbiter of the life sciences curriculum.	Curriculum was communal and social.
Truth and reality based on one's own reality	Truth and reality were social and inter-subjective.
Time was monochronic and its orientation was in the present to future.	Time was polychronic and orientation was past to present.

Through tabulating the assumptions in table 8.1 above it became possible to see the two cultures that worked at NHS in the life sciences classroom more holistically. It also became easy to see areas of assumption convergence, which harmonised the cultures and areas of assumption divergence which were a possible explanatory frame for the way UBYC was influencing the teaching and learning of life sciences in Ms Perkins and Mrs Moosa's classrooms.

In the next section, I present some examples of UBY artefacts from which I drew interpretations about why UBYC influenced teaching in the way it did. These artefacts were drawn from the co-generative dialogues and the in-depth interview with Top Dog, who was a key participant or informant (Schein, 2004) on UBYC. These artefacts were not the only evidence for interpretation as some have already been captured and presented in chapters five, six and seven. I present these artefacts at this point as key pointers for possible explanatory frames for the disruptive nature of UBYC. In these artefacts, in their own words participants in UBYC explain why they do what they do, and from these and other similar explanations captured earlier, I then tried to explain why UBYC influenced teaching and learning in ways that limited teaching and learning opportunities as observed in Mrs Moosa's and Ms Perkins' classrooms at NHS.

8.2 WHY WE DO WHAT WE DO – UBY SPEAK

From an analysis of artefacts from chapters five, six and seven as well as those captured below, five themes emerged as to why UBY did what they did in life sciences classrooms. UBY did what they did because: they were responding to enactments external to them, particularly by their teachers (defence mechanism); secondly UBY enacted because they had to do it (cultural issue / identity issue), thirdly, UBY enacted as they did to fulfil their intrinsic motivation needs (psychological need); UBY by being Black, felt they were expected to negatively enact as part of belonging to the Black race (collective responsibility); and lastly, they enjoyed doing it (personal choice / preference).

During the first, second and third dialogues discussion centred on aspects of being urban, Black and UBY life at NHS. UBY made the following remarks as they aired their views on these aspects. Firstly, on being urban and Black their contributions included the excerpts below:

Cheeky-Lwa	The difference between us and the rural youth is that you cannot tell me what to do and what not to do. Because I know my rights, and I know when I'm being violated (Dialogue, 12 th May, 2014).
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Just-Lungi: We fight for our rights and we also violate our rights. We abuse our rights, we take advantage of everything...straight up, you can see even in this school, you see how we act to certain teachers (Dialogue, 12th May, 2014).

Naughty- by-Nature:

It's the way we grew up, really, like we came from the lokshin (Black townships). In the lokshin I promise you, every guy wishes to be respected by everyone. So if you come to multi-racial schools, you gonna want to be respected by everyone, so that's how we act. We weren't born notorious, it's how we grew up. Black people want to be respected (Dialogue, 13th May, 2014).

Magic: But bottom line is Black people do respect, but sometimes if you don't respect, I don't respect. We have to respect each other. Even the bible says a child must respect an adult, and adults too must respect a child (Dialogue, 13th May, 2014).

From remarks such as those captured above, what emerged was that UBY did what they did to safeguard their interests or their rights as they allege. Their enactments according to Cheeky Lwa were a response to violations, which symbolised disrespect according to Naughty-by-Nature. Such violations were constituted by Magic in chapter six as a provocation that warranted a response, hence the enactments which then constituted the observed disruption. Another important point captured in these remarks was that the enactments were precisely directed at those who had shown disrespect, violated or taken the strength of UBY for granted. This aspect of UBY enactments brought to the frontline UBY teachers as the main targets of their enactments. Through targeting the teachers, teaching and learning was disruptively influenced by UBY enactments. The major understanding that emerged from an analysis of such UBY remarks was the realisation that UBY enactments were directed at their teachers and were a combative response to perceived violations of their *self*. Thus, from their explanations UBY did what they did because they were made to do it as a response to the classroom structure they perceived to be disrespectful, violating and provocative.

During the third dialogue whilst commenting on what it meant to be Black at NHS, UBY remarked:

Shy-Girl: I think we as Black people we are misunderstood. It's like teachers don't get our point, when we try to address them, but when a white kid or Indian kid tries to explain that same thing they understand.

Magic: In this school the teacher is always right. My experience has been good and bad. I can say us as Black people, we have been treated badly. The other day, there was a white guy caught with sixteen joints of dagga, I saw it in the office. They did not do anything, but Big Man, here, was caught in front of the whole school and was put in a van, to show people, it was like showing

off...In this school the teacher is right, the teacher can provoke you and if you react to the you become wrong all of a sudden...I am a human being, but there in the office they don't listen to your side of the story, it's only the teachers'. The same in our classes, like what Naughty-by-Nature said, if I and him come late for class, because the Indian teacher, if you come late, you gonna be chased outside, but if another Indian learner comes late, it's gonna be all fun, lovely, 'dubbly', no problem...

Big-Man: It's a 50-50 chance of survival.

Flambo V: It's either you die or I die. (Dialogue, 13th May, 2014)

I interpreted from Flambo V's remarks that its either you die or I die, that UBY enactments were acts of *socio-cultural signification*. They were identity battles meant to prove the existence and significance of UBY identity. From my understanding of culture creation, this aspect made UBY disruptive enactments, a cultural issue. From Shy Girl's remarks about being misunderstood, Magic's perceived unfair treatment to Big Man's 50-50 chance of survival UBY disruptive enactments could be taken as striving for signification or affirmation of their being or humanity in the life sciences classrooms. What I could interpret from the UBY explanations for their enactments was that the UBY did what they did because they felt they had to do it. They perceived the threat of insignification as a matter of cultural death hence their enacting was a desperate need for cultural survival.

During the same dialogue another explanation for why UBY did what they did emerged:

Top Dog: wouldn't say it's really about how notorious that action is. It's just the action. There is no scale, but some actually do it intentionally, like Naughty-by-Nature after all he has done (he had assaulted a teacher). We already knew that he was going to do that .So like when he did that everyone was like, oh my gosh,...finally he actually did it (Dialogue,2014)

Flambo V: Then we act. You go up then we go higher (Dialogue, 13th May, 2014)

Top Dog: You go low, we also go lower (Dialogue, 13th May, 2014)

Top Dog: There are some teachers that we really love, and they come across and say, guys lets behave and we agree, we cannot do that to her, let's just keep quiet, do our work and get out of here. After that, we see who is next and take it from there (Top Dog, interview, 2nd September, 2014).

From Just-Lungi's statement UBY did what they did because they consciously and deliberately wanted to do it. Their disruptive enactments according to Flambo V and Top Dog's sentiments were measured and orchestrated. From Big Sho's and Top Dog's remarks, such enactments bordered on intentional manipulations of the teachers and the teaching and learning context at

the pleasure of UBY. From these explanations it emerged that UBY got some satisfaction and pleasure from what they did, even though it involved the manipulation of people.

During the sixth (19th May, 2014) dialogue discussion focused on relationships and what UBY thought was important in relationships:

Cool Guy: I value happiness, respect and integrity.

Naughty-by-Nature:

I would say I value respect. In a relationship two people must respect each other. If there is no respect, it won't go well. I don't really care about happiness, it's all about respect.

Flambo V: I value respect, honesty, friendship and valuing each other. (Dialogue, 19th May, 2014).

On what they enjoyed:

Magic: The first thing I enjoy is being around friends, that's the most amazing time, you being among your friends and doing crazy stuff.

Big Man: I enjoy a lot of things when I'm out with friends or family. I enjoy most with my friends having fun and enjoying life.

Cheeky-Lwa: I enjoy going out with my friends from other schools, because I don't see them everyday (Dialogue, 19th May, 2014).

From these remarks and from a knowledge of the nature of UBY culture, it emerged that a possible reason for why UBY were negatively enacting in life sciences classroom lay in their relational values. From valuing respect, they needed to be regarded as independent yet competent individuals and from enjoying friends and close associations, their need for connectedness emerged. My interpretation from these remarks was that UBY did what they did because they needed to do it in an effort to fulfil their psycho-social needs.

Commenting on how one stayed and made it to the top of the food chain, Top Dog exposed another reason why UBY did what they did:

Top Dog: You just have to never back down, from anything...you know, I'm not proud of it but I'm just seen as that guy (Interview, 2nd September, 2014)

Similar sentiments were echoed by other UBY during our third co-generative dialogue when he alluded to UBY not owning up to a White person because they were Black and Black people are stubborn.

What emerged from these remarks was the notion of UBY disruptive enactments being part of the UBYC architecture, hence an integral part of UBY cultural being. UBY believed that they had a socio-political expectation to fulfil. To attend to this expectation they had a role or a part they had to play in the social dynamics of the life sciences classroom. Thus, despite the claim that they were not born notorious, disruptive enactments were a type of Pygmalion for them. It was not a passive self-fulfillment but deliberate routinisation of expected action from within through group socialization or as a function of internal integration within UBYC. With this understanding of the above UBY remarks, I interpreted that UBY did what they did because they felt they were expected to do it as participants in UBYC.

Whilst studying disruptive behaviour in the foundation phase of schooling, Marais and Meier (2010) identified factors that caused or were conducive to disruptive behaviour. Such factors the scholars classified as internal and external. Under internal factors consistent with this study Marais and Meier (2010) identified the need for recognition, which in this study I interpreted as social signification. Also consistent with this study the scholars identified the need for connectedness, which they term the need for belonging. Whilst the scholars attribute the need for belonging to the prevalence of racism and inequitable treatment, in this study findings indicated that the need was psycho-emotional and not a response to socio-cultural invalidation. For these scholars, disruptive behaviour stemmed from the need for recognition, as learners respond to lack of teachers' attention. Whilst this may be true in the foundation phase, for UBY in life sciences classrooms teacher attention was not the issue to the extent that they positioned themselves furthest from the teachers. It was on the basis of this observation that I interpreted UBY disruptive enactments from the need for recognition as stemming from teacher threats or perceived direct threats to UBYC existence and its significance for UBY. Other than being starved of attention, the two scholars further attribute the need for attention to learners' limited competence in idiomatic English, poor parental discipline and lack of parental warmth, findings from this study only managed to confine the locus of this need in the context of NHS and the life sciences classroom. From their narratives UBY confirmed healthy and supportive social relations outside NHS, hence no inference could be made of external factors to explain their enactments.

This study differed with the study above and other related studies (Levin & Nolan, 1996; Mabebe & Prinsloo, 2000; Rayment, 2006, Tilestone, 2004), in several aspects. Firstly, whilst disruptive enactments have been attributed to levels of psychological development (Marais & Meier, 2010), no such connection was established with UBY. The fact that most of the

disruptive enactments revolved around UBY and not their Black, Indian, Coloured or White peers at the same level of development, compromised the correlative significance of disruptive enactments to developmental stages made in the highlighted study. Secondly, another internal factor cited by Tilestone (2004) is that disruptive behaviour arose from ignorance of the covert and overt rules of the classroom. Converse to this attribution, findings in this study indicated that disruptive enactments arose out of UBY conscious and deliberate response to inhibitive overt rules and their covert agenda. This aspect came out as UBY claimed that Mr Ogden and teachers underestimated them and they were angry for being taken for granted, especially when teachers tried to manipulate the code of conduct against UBY. Through this finding this study went beyond findings by Marais and Meier (2010) and dispelled the notion that UBY were disruptive because they were ignorant of the middle-class rules and ideals that governed the classrooms since they came from squatter camps, on the streets or abusive family scenarios.

In Marais and Meir's (2010) study disruptive enactments are attributed to an internal need for power, control and the venting of unresolved anger. Whilst my findings parallel theirs with regards to the factor of unresolved historical anger, they diverge on the former aspects. With regards to unresolved historical anger what emerged from this study was that UBY harbored some resentment for whiteness mainly due to socialisation. Observations were that UBY were aware of how Black people had been positioned during apartheid and how they as part of the Black collective came to be where they were. This political consciousness and resulting anger of the Black collective that came with it, seemed to constitute their cultural being as well. Beyond these historical aspects, this study established the existence of UBYC and through it UBY agency. By being agentic, UBY power was confirmed. This aspect of UBY diverges findings from this study from previous ones. Whilst in previous studies, findings indicated that learners from disempowered and disempowering contexts deliberately challenge the teachers' moral authority, in this study UBY through their agentic power and not from vulnerability challenged the teachers' moral authority. As captured within the artefacts, they knew and believed they had the power and had no reservations to operationalise it as they pleased. In this regard, the major finding was that disruptive enactments were not due to the need for power and control but rather manifest expressions of power and control.

This study made one unique finding on internal factors that caused disruptive enactments. In this study it was my finding that disruptions had utility in themselves. It was found that UBY provoked for the sake of causing a disruption and at times enjoyed being disruptive. The duration of the disruptive game depended on the teacher's response. If the teacher tried to quash

it, they would go higher and if the teacher ignored their provocative enactment, they would stop, since there would be no utility in it. What I found problematic with this aspect of UBY disruptive enactments was that they bordered on sadism, as they derived pleasure from observing their teachers' pain. Considering this finding from a non-sadistic dimension, I interpreted this observation as UBY trying to make their teachers feel how they were experiencing the context the teachers had structured. Observations were that when teachers ignored UBY enactments, the latter would stop. It seemed stopping for UBY was a realisation by UBY that the enactment had no currency in conveying the intended message to the teachers about how they felt. Thus, when enactments lacked utility in themselves, UBY would desist from operationalising them.

On external factors, findings in this study were consistent with those of Roberts and Venkat (2016) in as far as converging on school-based factors that were conducive for disruptive enacting. Cited school-based factors by these scholars include teacher pedagogical and didactical inadequacies. Findings in this study parallel to those of Roberts and Venkat (2016) but also identified additional teacher factors, other than pedagogical or didactical inadequacies. In this study, the problematic teacher factors seemed to be in the domain of affect and inter-personal communication. UBY claimed that they were disruptive because they found the context as structured by their teachers to be devoid of variety, expressive animated vocalisations and characterised by linear conversational patterns. UBY by virtue of being participants in UBYC which valued frank, multi-nodal, simultaneous vocalisations found such a context limiting in terms of asserting their connectedness.

In the section above I tried to unpack UBY explanations for their disruptive enactments as observed in life sciences classrooms at NHS. In the discussion that follows I place these explanations in existing literature. Despite this standard expose, I believed addressing the fourth research question invited placing the findings in existing theory to better understand the deeper origins of UBYC disruptive influence on teaching and learning in the life sciences classrooms at NHS.

8.3 THEORISING THE DISRUPTIVE NATURE OF UBYC

An examination of the life sciences teachers' and UBY juxtaposed cultural assumptions in table 8.1, pointed to classroom spaces with multiple realities premised on divergent fundamental assumptions. From this understanding the life sciences classrooms were a unique space with context-bound specific realities, totally different from all that was external to them.

My interpretive responsibility then was to explain how this context was organised and related to social imagery. Social imagery was used with reference to conceptions about social relationships between different agents in the life sciences classroom. This was a shift from linear causal explanations where one would explain the influence of UBYC on life sciences teaching and learning just as the result of divergent assumptions. My interpretation therefore sought to explain what it meant and what happened when divergent assumptions were brought into spatial proximity like in the life sciences classrooms, and responding to the WHY question of this research; why such assumptions, as UBYC, influenced the context in the way they did.

The exploratory discussion hereafter integrates UBY reasons captured above and existing theory from the analytical and the conceptual frameworks in an exegetic exercise to establish why UBYC was disruptive. It was my view that this was fruitful considering the inaccuracy and non-viability of deficit-based notions, examples of which have been cited throughout this work. With this view I felt compelled to explore other alternative explanations for the disruptive attributes of the puzzling phenomenon I had witnessed in Mrs Moosa and Ms Perkins classrooms. As I explored and theorised the disruptive nature of UBYC, I placed my explanations under themes that I gleaned from UBY reasons for doing what they did.

8.3.1 Theorising UBYC disruptive nature as response to contextual structure

Understanding UBYC disruptive nature in the teaching and learning of grade eleven life sciences at NHS called for a re-examination of the of the socio-political space or the social structure in which life sciences teaching and learning occurred. From my conceptual framework ideas from CRP and Bourdieu's social imagery proved illuminative.

CRP as a pedagogical framework provided the model for structuring classrooms in the context of cultural diversity. The implicit notion in CRP as a framework is that if classrooms are structured in conformity to CRP tenets, teaching and learning in the context of diversity would occur smoothly. With CRP as a template, teachers in the context of diversity have to be non-judgemental and strive to establish inclusion through structuring classrooms in ways that all learners feel valued and connected (Brown-Jeffy & Cooper, 2011). Such teachers acknowledge their learners' cultural endowments and in response create contexts and environments that accommodate their learners' perspectives and identities (Gay, 2010). For such teachers, classrooms are platforms for meaning enhancement through bringing the curriculum to life by integrating relevant innovative instructional strategies in curriculum implementation (Gay, 2010). Through acknowledging learner agency, such teachers structure

their classrooms in ways that scaffold personal relevance and choice. Summarising such a context structured on a CRP template, Ladson-Billings (1995) regards such classrooms as communities of learning. With this knowledge of the ideal, the question then became, how did the structure created by teachers at NHS, as captured and influenced by their basic assumptions compare with the aspirations of CRP?

From the two life sciences teachers' basic assumptions, the expected and assumed classroom setting at NHS was one in which Mrs Moosa and Ms Perkins were in complete control with everything proceeding as prescribed in the policies, standing instructions and as interpreted and adapted by the teachers. Operationalising their expert power, they envisaged the life sciences classrooms as their sole domains and expected themselves to be completely in-charge with all learners being subject to them and fully complying. However, as found in this study, the context was otherwise. Ironically, the life sciences classroom as found was a space with its own reality, not what Mr Xaba and Mr Ogden anticipated and definitely not the sole domain of the two life sciences teachers. The context was not one in which power was centralised and conformity could be enforced and learners would readily buy into the agenda of the school and the teachers.

To answer and address the fourth research question there was a need to re-theorise the life sciences classroom in a manner that ultimately conceptualised why the context was as it was. In re-theorising the life sciences classroom, I invoked Bourdieu's (1997) ideas of *field*, *habitus* and *capital*. My view as I theorised the social imagery of the life sciences classrooms was that UBYC influenced the teaching and learning of life sciences in the manner it did because the culture made the life sciences classroom a contested social *field*. Bourdieu (1997) conceptualises a social field as a network or configuration of objective relations between positions which are objectively defined in their existence and in the determinations they impose upon their occupants. For Bourdieu, determinations are based on the agents' present or potential situation in the structure of the distribution of *capital*. Distribution of capital is important because its possession commands access to the specific profits that are at stake in the field. From Bourdieu's description of social fields their properties can be inferred. Fields are structured; have general laws or logics that guide interactions and the stakes towards which practices are orientated; are characterised by struggles for the stakes; require a socialised body that orients agent dispositions to the stakes and so to the continuation of the field; are structured by a state of power relations based on *capital* being transacted; produce distinctive strategies adopted by different agents relative to their own position and trajectory and they function

analogous to a game. From the inferred properties the social field like the life sciences classroom and UBYC were spaces in which agents confronted each other with differentiated means and ends. As the agents engaged in this field it was a struggle to conserve or transform the field. According to Bourdieu (1997) the aim of these struggles was to conserve or transform the equilibrium of influence and ultimately what was at stake, was *capital*. The fundamental assumptions held and informing agents in this context determined their cultural *capital*. This capital was deposited in what Emdin (2010) regards as the agents' cultural toolkit. This cultural *capital* oriented the agents' predispositions or what Bourdieu (1997) terms *habitus*. Each social field has its *capital* which is made up of what Emdin (2010) refers to as an "accumulated history" (p.18). This capital is held in a cultural toolkit of practical competencies that predispose agents to act in certain ways at certain times and otherwise at other times. The capital held in the symbolic toolbox is drawn upon when individuals feel the need, when dealing with a particular structure within a social field. Thus, *capital* renders agents powerful as they feel they can act and respond to constraining circumstances. By virtue of their *habitus*, as oriented by their *capital*, agents like life sciences teachers and UBY created a *social structure* in their unique non-overlapping social fields which enabled or constrained their agency and regulated the ways in which they used what was in their cultural toolkit.

Social structure was invoked at this point as a notion that could be instrumental in explaining and predicting actions and interactions in social fields. The original metaphor by Sewell (1992) presents social structures as a building framework which influences the behaviour of all within it. However, current understanding suggests social structure is not detached from the people or communities who move through it but is created by individuals as they interact (Shanahan & Nieswandt, 2011). This contemporary view has led to a less rigid understanding of structure through which it is viewed as a configuration of underlying patterns, expectations and norms that influence behaviour and relationships within social fields. At a micro-scale, structure refers to the way norms and patterns shape the enactments of agents within a social system like the life sciences classroom. These patterns and norms that constitute structure are not reducible to individual agency but are durable to withstand individual whims through a dynamic logic of their own which contributes to their reproduction over time, though at times in slightly altered forms (Hays, 2008). By having a logic of their own, structures are reproduced even when actors engaging in the relations are unaware of the patterns or do not desire their reproduction (Sewell, 1992). There are three ways that structure needs to be understood from the way it has been described above. Firstly, it is a creation of human beings

as well as the mould they fit. Though most times structure operates and manifests in subtle covert ways, it would not exist without human agents' participation (voluntary or involuntary; conscious or unconscious) (Giddens, 1984). Secondly, structure is enabling and constraining. Social structure not only constrains human agents but it also renders them both sense of identity and secures their position within the field. Thus, structure not only limits but also lends a sense of self and the tools for creative and transformative action which make freedom possible even when agents are within a constraining field. Hays (1994) citing Durkheim (1965) captures this paradox and posits "liberty is the fruit of regulation. Through the practice of rules we develop the capacity to govern and regulate ourselves which is the whole reality of liberty" (p. 61). The argument is, without the regulatory capacity of structure (through its enabling and constraining) there is no possibility for conscious purposive action. The third and last way in which structure is understood is that it has different levels or exists in different layers. The layers of structure vary and can be more or less hidden from everyday consciousness; more or less powerful in guiding human thought and action and more or less durable in their resistance to change. Such stratification points to the possibility of structure being more or less open to intentional and unintentional human manipulation. The notions of structure presented above provide a deep understanding of UBY, UBYC, life sciences teachers and life sciences classroom and why interaction of the four influenced the context in the way it did.

By looking at UBYC, life sciences teachers and NHS as unique fields, each with a distinct structure structuring sequences, the life sciences classroom became a contested cultural space. From a comparison of the assumptions held within each of the three fields it was apparent that there were divergent structuring structures under which participants in each of the fields operated. It was inevitable that the convergence of such diametrically opposed structuring structures would result in a classroom structure that would not be conducive to teaching and learning, but for disruptive enactment. As established in this study, the artefacts that UBY exhibited because they were located within the field of UBYC varied significantly from what was expected of them by the life sciences teachers and NHS. Thus, when UBY came into the life sciences classroom the structure of the life sciences as a social field was different from those of their field which affected their agency as they could not transact their *capital*. *Capital* in this case was regarded as symbolic structure-bound, widely shared high status signals such as attitudes, preferences, language, accent, behaviours, information, formal knowledge, skills and credentials acquired through socialising circumstances (Quaye, 2015).

Understanding the interplay between *field*, *structure* and *capital* helped in seeing why UBYC influenced the teaching of life sciences in the way it did. Participants from the two cultures (life sciences teachers' culture and UBYC) interacted in the social field of the life sciences classroom. Life sciences teachers held a different form of capital which informed ways of interaction, communication, behaving and thinking that they valued. In line with their fundamental assumptions which predisposed them to enact their agency in certain ways, the life sciences teachers created a classroom structure that promoted the exchange of their capital. Such a structure as observed at NHS was characterised by a hyper-strict curriculum which revolved around the life sciences teachers who valued rationality and encouraged individualism. This structure accorded the teachers platforms to demonstrate their intellectual endowment, hence operationalising their expert power through lengthy expositions. In terms of pedagogic disposition, contrary to CRP propositions, curriculum presentations were content-laden and were meant to cover the syllabus, without affirming the multiple realities of the life sciences classrooms at NHS. The life sciences classroom structure created by the teacher was also characterised by high learner regimentation and punitive heavy-handedness, as the teachers, by virtue of being custodians of NHS values tried to maintain the euro-centric status quo or what Meier and Hartell (2009) regard as maintenance standards. Within this structure, UBY and UBYC were perceived as liabilities rather than assets and as impediments that hampered the life sciences teachers from exchanging their *capital* and profiting in the grade eleven life sciences classrooms at NHS. This UBY threat, as perceived by their teachers led the teachers to adopt strategies which further created a more constraining classroom structure, whose architecture was designed to limit UBY agency and their ability to transact their *capital*.

In the same life sciences classroom UBY had their own social field with a structure premised on UBYC. In their toolkit they held their cultural symbols which predisposed them to act, speak, relate and conceptualise in certain ways. These symbols constituted their *capital*. Despite being a unique and distinct cultural entity UBY were expected to function, operate and manoeuvre through the structures of the life sciences classroom, like all learners who had signed the Code of Conduct at NHS. Findings from this study indicated that UBY found the classroom structure as structured by their teachers constraining. Due to strictures arising from the classroom structure, UBY evolved ways of enacting their agency in ways that affirmed and reaffirmed their cultural identity as well as allowed them to transact their *capital*. With this understanding I theorised that with both parties keen to transact their capital, it was the opportunity to exchange *capital* that was at stake in the life sciences classrooms. As each of

the two parties tried to seize the opportunity to transact and sometimes failed, the life sciences classrooms were rendered contested spaces. For the teachers successfully transacting meant teaching and for UBY it entailed learning in a social field which they felt culturally validated. As they perceived the structure imposed by their teachers as invalidating, UBYC enabled them to respond. The disruptive nature of UBYC therefore arose in its capacitation of its agents to respond to perceived cultural threats. Through UBYC the struggle between life sciences teachers and UBY became one in which each of the parties tried by all means to de-legitimise and undermine the currency of each other's *capital*.

This reciprocal interplay between life sciences teachers' and UBY social structure and agency explains the affirmation and reaffirmation of structures that influenced and impacted the teaching and learning of life sciences in Mrs Moosa's and Ms Perkins' classrooms. When the life sciences teachers created structures that allowed them to expend their *capital* they did so at the expense of structures that promoted the agency of UBY, an approach which triggered enactments by UBY to allow them to be successful in the life sciences classroom. The effect of these agentic enactments was dual, firstly they served to reaffirm the structures that created them and secondly they caused the creation of alternative social structures. For example, as life sciences teachers practised in their classrooms at NHS, they created a social structure that UBY viewed as constraining for example the rigorous testing regime instituted by Ms Perkins. UBY failed these tests because they did not have the symbolic capital to be fully engaged in the pedagogic setting and their failure to enact their agency within the pedagogic setting pushed them to enact their agency in other ways which I have characterised as symptomatic of demotivation, disengagement and disruption in the previous chapter (seven). These other ways constituted UBY parallel enactments which led to the advent of UBYC.

The creation of UBYC as a response to structural constraints and the structure it precipitated in the life sciences classrooms at NHS also explained why the culture influenced life sciences teaching and learning in the way it did. Due to its birth on assumptions which were critical of the established Eurocentric social structures at NHS, UBYC became positioned by other parties at NHS, as less of a culture than the teachers' culture and NHS culture and to UBY being positioned as less than the norm. This view relegated UBYC to a lower class hence the belief held by the life sciences teachers at NHS that UBY needed to be assimilated into euro-centrism. Such positioning of UBYC set in motion structural dynamics as the teachers and school created more structures to squash those UBY artefacts they deemed undesirable whilst on the other end UBY critical of the system, fought back. Fighting back caused the

deployment of further constraining structures by the teachers through drafting more policies and draconian punitive measures. These were of course a deterrent but caused further enactments of UBY agency and which further reaffirmed UBYC. Processes of affirmation and reaffirmation by both teachers and UBY set in motion contestations and confrontations that disrupted the teaching and learning of life sciences and generally negatively affected the pedagogic setting. Relegation of UBYC to a lower class structure also devalued UBYC and by default its creators. In response UBY created social structures to reaffirm and reassert UBYC and fracture the social dynamics which they attributed their subservience to. Efforts to disrupt and interrupt the Eurocentric structure-control continuum compromised teaching and learning opportunities in the life sciences classroom. It was this interplay of social structure with enactments of dispositions that explained the disruptive nature of UBYC in life sciences classrooms. The crucial finding was that UBYC was disruptive because its presence as another culture in the life sciences classrooms made these social fields contested cultural spaces. Due to the divergence and non-negotiability of the assumptions upon which the cultures were premised the resulting contestations became a matter of cultural survival or extinction, hence the disruptive nature of engagements between life sciences teachers with UBYC.

8.3.2 Theorising the disruptive nature of UBYC as a product of power games

As I observed UBYC power operationalisation in life sciences classrooms, it became evident to me that what was unfolding before me was not just the reduction of my colleagues' moral authority but also the emergence of 'new' power relations between UBY and their life sciences teachers at NHS. As I tried addressing the last research question in this chapter, it became my view that the disruptive influence of UBYC on life sciences teaching and learning could also be explained from consideration of power operationalisation in the grade eleven life sciences classrooms by UBY, a reality my colleagues seemed oblivious of.

From the discussion in the preceding section of this chapter, life sciences teachers and UBY had their own unique cultural toolkits in which they held their *capital*, the possession of which enabled them to act. According to Schoenmakers (2012), this ability to act is the essence of power. The fact that both parties had capital and therefore had the ability to act (power) framed the life sciences classroom beyond the neo-Marxian discourse of institutionalised oppression, with one party having power over the other power, presumed to be powerless. In this alternative frame all participants in the life sciences classroom had power because power is inherent in all social fields (Giddens, 1984). This delocalisation of power postulated by

Giddens and also theorised by Foucault (1997) presents power as constituted by relations and inherent in all social relations. Viewed in this way, power just like relations, becomes both dynamic and multidirectional. Contrary to hegemonic neo-Marxian views, Foucault's idea is that power can be exerted from one end and the other party also has power to resist, affirm or deploy their own power. In this capillary model of power, Foucault (1980) argues that power relations between individuals cease to be reducible to oppressor-oppressed or master-slave relations. The implication of Foucault's notion is that the location of power in all relations, and all such relations transcending the binary of oppressor-oppressed, power becomes productive in all relations.

By productive power, Foucault (1980) contends that power acts and manifests itself in definite ways. Scholars like Kelly (2009) further nuance Foucault's view of power and see it as having the following features: it is impersonal or subject-less as it is not guided by the will of individual subjects; it is not a possession but rather a de-centred, multi-directed strategy as it is not concentrated on a single individual or class but rather it can come from any direction; and it is relational as power is always a case of power relations between people as opposed to a quantum possessed by people: as such it is not important or possible to measure or locate it. The key idea emerging from these postulates is that relations of power need to be understood as different from domination, as this perspective allows power to be productive and break out of the negative frame in which it immobilises relations. Foucault's (1997) argument in support of this notion is that if power was only repressive and was only instrumental in objectifying, it would be difficult to manage and it would be impossible for objects to comply. The contention here is that all individuals as argued by Foucault have power, hence agency, by which they can make choices which may be shaped by both the available opportunities and the norms present within the social field. Foucault's view of power compelled me to begin to entertain the idea and recognise that life sciences teachers' power and UBY power was playing a major role in life sciences classrooms, as a human institution.

According to Giddens (1984) social institutions like the life sciences classroom are power systems since they are involved in the institutional mediation of power. They mediate power because they conscientiously attempt to govern the lives of individuals in them through constant deployment of rules or what Foucault refers as power tactics. Deployment of such rules at NHS gave life sciences teachers formal authority or legitimate power to enforce compliance. Not only did the teachers have legitimate power but were also endowed with expert power, information power and ecological power (Yukl, 2006). According to Yukl (2006)

an agent possesses expert power when she or he has specific knowledge or skills which will make the target succumb to their influence in order to gain guidance from the agent. The life sciences teachers had the teaching experience and were regarded as specialists by their peers and their certificates validated their specialisation. They believed and professed that they had the knowledge and all they needed were vessels to fill. They, therefore claimed to have expert power which gave them the power to teach life sciences. Yukl (2006), defines information power as the ability to act, based on the agent having control over the targets' information. From accessing learner's personal files and being privy to some of their learners' personal circumstances, life sciences teachers had information which they operationalised as professed by Mrs Moosa during interviews when she said she used some of this information against them, to force them to learn.

For Yukl (2006) ecological power is the agents' control of the physical environment. At NHS life sciences teachers controlled the physical arrangements in their classrooms. They dictated what was to be done, when and how it was to be done. Through their ecological power admission into and staying in the life sciences classroom was their reserved privilege. In the classroom they deployed their power to teach through various technologies of control and coercion. By virtue of being *experts*, they slavishly promoted technical jargon and mastery over basic communication at the expense of fostering rapport with all their learners as a means to understanding. In this context there was only a single correct response and the learners had to master or risked failing. As the teachers validated their expert power in enactments above, their pedagogy became decontextualised, mechanistic and domineering. From my interpretation what was tragic as teachers operationalised and validated their power they unintentionally constructed themselves in the eyes of UBY as self-assured manipulators and controllers.

UBY held the assumption of a superior social identity. From the pedestal of fictive superiority UBY regarded themselves as privileged, advantaged and knowledgeable. The three markers that UBY used to describe themselves implied that they had the power to act. From their experiences in and out of the life sciences classroom they had developed their own expert knowledge of how to interact, communicate, learn and navigate the social field. Possession of this expert knowledge and hence expert power was vocalised by Big Man in one of our dialogues where he claimed that UBY had not been born notorious but made themselves notorious. From such claims it became clear that enactments of agency and deployment of power tactics in the life sciences ceased to be a preserve of life science teachers only, but also included UBY. UBYC and the participation of UBY in it gave them power to enact their agency

and deploy their power in different ways, some of which negatively influenced the pedagogic setting. Thus, UBYC influenced the teaching and learning of life sciences in the way it did because it rendered power to UBY to rise and express themselves when they felt challenged or threatened with silencing.

In the life sciences classrooms, the teachers by virtue of their expert power wielded the power to teach, whilst UBY through UBYC wielded the power to learn, when they pleased. Through their power to learn UBY engaged when they felt the need. As confirmed by their teachers, through UBYC power to learn, when UBY actively and positively engaged with their teachers and peers, this was the good day that Ms Perkins talked about. UBYC also gave UBY the capacity to disengage from and disrupt life sciences classes, hence Ms Perkins day of nightmares. UBYC through disengagement expressed UBY power to learn (in this case, choosing not to learn), by consciously choosing not to interact with the teacher but sitting at the back. Through their power to learn UBY would choose who to listen to and when. On good days they would listen and take down their notes, which Naughty-By-Nature through the same power claimed he would study alone and pass. Through this power to learn UBY prescribed how they wanted to be taught in order for them to learn. Thus, through rendering the power to learn to UBY, UBYC enabled UBY to actively and directly engage in a power struggle with the life sciences teachers. With regards to power UBYC constituted UBY as equals to their life sciences teachers. Through this power and resulting enactments UBY affirmed their superiority, disparaged the teachers' expert power and trivialised life sciences, all of which sabotaged their learning opportunities and negatively influenced the pedagogic setting.

From the discussion above, what emerges is that the life sciences classroom was not only a contested space in terms of social fields coming together and agents trying to transact their *capital*, but it also became a battleground for powerful agentic enactments. The life sciences classroom became a platform for power games in which the power to teach was confronted by UBY power to learn. In this instance the illusion that life sciences teachers wielded power over all that was in the life sciences classroom was unmasked by the reality of nonchalance, disengagement and disruptive conduct premised on the power of UBYC. Through UBYC power, UBY held themselves in esteem and fought back on this battle ground. The victim in this power struggle was life sciences education for all, as it was sacrificed so that UBY and their teachers could retain their power and keep their places at the table of power in the life sciences classroom. It was in the prevalence and persistence of these power games in the life sciences classroom that the influence of UBYC on life sciences teaching and learning seemed

explainable. UBYC influenced teaching and learning in the manner it did because it rendered UBY a locus of power and not a victim as portrayed through the inhibitory discourse of deficit. UBYC made power relations in the life sciences classrooms multiple, which placed UBY on the same pedestal as all other agents including their teachers. Thus, the presence of UBYC in the life sciences social field ushered in a new regime of truth which was at odds with the traditional discourse in which only the teacher had the power. Failure by the life sciences teachers to identify or acknowledge this truth led them to enact and deploy power tactics which triggered UBY responses as they reaffirmed and validated their power. It was this power play that influenced teaching and learning in the disruptive way it did.

8.3.3 Theorising UBYC disruptive nature as safeguarding fulfilled needs

The influence of UBYC on life sciences teaching and learning at NHS can be explained in terms of the psychology of human needs and the capacity of agents to choose. When UBY spoke of listening when they wanted to or engaged when they pleased, it pointed to the existence of an internal logic or a natural capacity that galvanised their energy resources in certain ways. From my conceptual framework as espoused by the Self-Determination Theory (SDT), this logic or natural capacity has been identified as intrinsic motivation. Due to its locus being in the affective domain, intrinsic motivation is intertwined with culture.

Energy resources mobilised through intrinsic motivation are directed towards the fulfilment of three needs, that is, autonomy; competency and connectedness (Ryan & Deci, 2000). Within SDT, autonomy is the need to feel that one is engaged in a task out of free-will; competency is the need to feel capable to successfully execute a task; and connectedness is the need to feel a sense of relatedness or belongingness (Ryan & Deci, 2000). Intrinsic motivation as an internal logic has been associated with qualitative attributes that are crucial for teaching and learning, such as being innovative, striving for quality and fortitude and creativity. With this understanding of intrinsic motivation and its rendering of choice, how then should classrooms be structured to encourage learners to choose learning and teaching?

The classroom structure aspired to in the context of intrinsic motivation promotes feelings of autonomy, competency and connectedness. Classroom structure that enhances competence has been identified as one that provides mastery experiences (Palmer, 2005). This involves structuring assessment to learners' frames of reference and incorporating multiple modes of knowledge representation and skills assessment (Wlodkowski & Ginsberg, 1995). Assessment task design in this context is made progressively difficult to allow learners to

experience a sense of mastery. It is envisaged that structured this way the classroom structure engenders competence. A sense of autonomy is enhanced in classrooms as learners choose work partners, participate in the construction of classroom norms, choice of materials to use in activities, timing of work to be covered and choice of assignment tasks (Palmer, 2005). To promote feelings of connectedness and being included, teaching in such classrooms has to project high expectations for all learners in it, whilst acknowledging their agency (Wlodkowski & Ginsberg, 1995). Through collaborative learning approaches, cooperative learning, multi-directional communicative engagements, ownership of learning and structuration is shared by all in the classroom. Juxtaposing the classroom as envisaged in the context of intrinsic motivation with the context in which UBYC had developed, it became evident why UBYC was disruptive to teaching and learning in life sciences classrooms.

Science learning is associated with cognitive dissonance that has been observed to cause elevated levels of anxiety (Udo, Ramsey, Reynolds-Alpert & Mallow, 2001). To reduce anxiety and facilitate smoother cognitive changes, teachers are expected to create inclusive and pleasant classroom atmospheres, structured around empathy and equity. Such a classroom structure has been found to promote autonomy, competency and connectedness. This structure was not observed in life sciences classrooms at NHS, and these three needs were left unattended. Looking for explanations of the influence of UBYC in the realm of the psychology of human needs, exposed the psychological aspects of this culture.

According to Schein (2004), the psychological basis for culture creation is cognitive stability and anxiety reduction. Juxtaposed on SDT, it can be implied that culture creation strives to fulfil intrinsic motivation needs. Culture from Schein's (2004) organisational culture framework, provides a joint sense of relief from contextual challenges. The capacity of culture to provide a mechanism for psychological stability, lies in the fact that it is non-confrontable and non-debatable. Within the organisational culture framework, culture provides a lens for viewing the world; how to react; and act in various situations. Thus, culture provides psychological stability since it provides a cognitive map that allows agents to perceive the world around them as congruent to their assumptions (Schein, 2004). When this notion is superimposed on SDT, it became my view that culture like UBYC, was a psycho-cognitive operational mechanism that ameliorated UBY needs for intrinsic motivation. It was an UBY creation meant to make their life normal, and as a result, UBY, like Big Man and Big Sho despite perceiving the context as skewed against them, professed to have a great time. Such

was the capacity of UBYC to enable anxiety reduction and in this way met their needs for autonomy, competency and connectedness.

The question that arises from the discussion above is, if UBY intrinsic motivation needs had been met by UBYC, why then were UBY disruptive? To better understand the disruptive nature of UBYC it must be remembered from a cultural perspective, teaching strives to change assumptions and inculcate some assumptions in learners. It must be acknowledged that learning involves a resurrection and re-examination of stable, non-negotiable assumptions, which are part of the psycho-cognitive schema of agents. Such a process according to Schein (2004), is psychologically traumatising as it involves frame-breaking, and as such, raises anxiety levels in agents as they try to maintain their assumptions or as they grapple with a new equilibrium. In the context of this study the life sciences teachers tried to transform UBY in their own ways, UBY's psychological needs had already been met and fulfilled by UBYC. Thus, the way that teachers interacted or tried to interact with UBY was cognitively destabilising for UBY. By virtue of their being participants in UBYC, calls for a re-examination of their basic assumptions, as their theories-in-use thus destabilised their psycho-emotional and interpersonal world. This destabilisation raised UBY's anxiety levels and for them to revert to cognitive stability, they enacted in ways that re-affirmed their basic assumptions. Such enactments, by being directed at reaffirming UBYC assumptions, disrupted teaching and learning as well as denied life sciences teachers and learners at NHS the opportunity to respectively teach and learn. My analytical interpretation within this theme was that the disruptive nature of UBYC emanated from UBY trying to safeguard the autonomy, competency and connectedness it provided them. The disruptive nature of UBYC arose from its custodians fighting to circumvent processes that would subject them to anxiety and psycho-emotional dissonance. Thus, the disruptive nature of UBYC was a mechanism of anxiety reduction. Through the disruptive nature of UBYC, UBY remained independent, powerful, capable and above all survived as a group. Viewed this way the disruptive nature of UBYC became a need to safeguard fulfilled needs. In this way disruptive enactments performed a dual role, that of safeguarding their needs as well as an affirmation of how UBYC had addressed their psychological needs. With regards to the latter, negative UBY enactments became overt UBYC operationalisation of autonomy, competence and belonging.

8.3.4 Theorising UBYC disruptive nature as bound in history

It was my expectation as I embarked on this study that UBY in integrated contexts like life sciences classrooms at NHS were to be beacons of hope of a new racially-ignorant and culturally cosmopolitan South Africa, untainted by the bigotry of apartheid. It was my supposition that they were the hope of a utopian rainbow nation because they were the born-frees or Madiba's children (Madiba refers to Nelson Mandela who was the first democratically elected leader of South Africa). My supposition was premised on the fact that all UBY had not witnessed or experienced apartheid, as such I expected them to be free from the bondage and ideologies of the past. However, the UBY that I dialogued with in 2014, though being born-frees were culturally traumatised (Alexander, 2003) and did not shy away from what Foucault (1997) regards as genealogically retreating to the past as they described themselves and explained the context as they perceived it. Guimaraes (2012) contends that it is difficult for progeny to wander and completely escape the collective's of origin as well as other restricted forms of group solidarities. In their assumptions UBY professed that they were engaged in a struggle and saw space recapture for the Black people in the life sciences classroom as one of their roles. They were unapologetic in their conscious decision to take on the system and they unanimously concurred that theirs was a protracted struggle on multiple fronts. They regarded their struggle as personal and transversal in nature - it was a resistance to institutional control over self-formation and the imposition of external standards on them. It was a struggle meant to make a public spectacle of how technologies of control and coercion were deployed. Such political rhetoric for me was reminiscent of the Black South African youth of 1976 Soweto Uprising, as they resisted the use of Afrikaans as the language of instruction. Such rhetoric as an artefact of UBYC indicated the vestigial persistence of the historical in the present and the successful transmission of cultural trauma from older Black generations to UBY. This vestigial persistence of cultural trauma transmission resonated with Guimaraes' (2012) notion of ethnic-racial relationships through which group / ethnic formations became a political undertaking. Ethnic-racial relations became social placements that emanated from self-identification meant to resist all perceived collective threats at the altar of group solidarity.

As I considered UBY historical rhetoric and UBY fundamental assumptions superimposed on Alexander's (2003) postulations of cultural trauma, it began to emerge that UBYC's influence on life sciences education stemmed from a historical social reality beyond the classroom that bound the fate of UBY with that of the Black collective. Wolf (2013), citing Foucault, terms such foregrounding of historicity the history of thought. He posits that

foregrounding the past connects the historical yet *a priori* condition to currently observed enactments which is crucial for fundamental attribution. Wolf (2013) further contends that truth of any particular *connaissance* (regimes of truth held true at certain specific points within an extensive social field) is determined by its place within a larger field and may not necessarily be located within the immediate field. Thus, it followed from this analytical base that the disruptive nature could be explained and its influence understood from contexts outside the life sciences classrooms. This analytical understanding allowed me to explore the role historicity had in the evolution and the disruptive nature of UBYC. To further explain how historicity in the form of apartheid and reincarnated associated localised power struggles influenced the life sciences classrooms more than two decades after its demise, I invoked Foucault's concept of the panopticon and Alexander's (2003) notions of cultural trauma.

In political terms apartheid was a structure of control, discipline and punishment, whilst economically it was an instrument for disempowerment and marginalisation, and morally it was a justification for discrimination and racial bigotry. Politically, apartheid, in Foucauldian terms was a technology of power in which there was a political investment in which the human body was subjected to tactics that explored it, broke it down and rearranged it with an intention of producing subjected and practised bodies or what Rouse (2005) terms "docile bodies" (p.3). From the operationalisation of apartheid into all facets of human life, it became my view that apartheid needed to be conceptualised not only as a political crisis, but a cultural crisis. Through it Black people as a collective, more than any other race group, were subjected to acute cultural discomfort that violated their collective identity. Apartheid posed a threat to the Black collective's past, present and jeopardised its future and produced what Alexander (2003, p.85) terms "cultural trauma".

Apartheid was a culturally traumatic event because it dealt an irreparable blow to the sinews that held Black social life together and damaged the bonds that made the Black collective a proud community by impairing their self-worth and violating them in ways that reinforced bigotry and deficit notions. As a traumatic event, apartheid left an indelible mark on Black people's memories in South Africa, UBY included, through the hereditability of trauma (Bourdieu, 1986). According to Alexander (2003) cultural trauma marks the memories of the collective forever and "changes their future identity in fundamental and irrevocable ways" (p. 85). Through "spirals of signification" which are compelling frameworks for cultural classification, the cultural trauma is propagated across generations through claims made by carrier groups (families, political formations and social groups, like UBY) about the shape of

social reality (Alexander, 2003, p. 94). Carrier groups, through claims, make critical representations about the nature of their pain, how they have suffered as persons affected by the traumatic event, how their identities coalesce with the collectives' and lastly, identify who was responsible for the trauma. This is the phenomenon that Top Dog, as found in this study alluded to when he spoke about how they came together. As UBY met, they made critical representations about their experiences at NHS and in the life sciences classrooms they made connections between their present to the past of the Black collective, which they were part of. Through these critical representations cultural trauma just like Bourdieu's *capital* was passed on and the historical master narrative was reproduced. This inter-generational transmission of cultural trauma was facilitated by an absence of alternative and sufficiently persuasive narrative from the way the context was structured. It was in the context of no alternative context that Top Dog was confident of the continuity and the virulent spread of UBYC if the contextual variables that facilitated its development were not oriented and sensitised to it.

Apartheid as a traumatic experience managed to inflict injury on the Black collective. It established and confirmed them as the worst affected victims of the policy and undeniably attributed responsibility to the White collective – so was the script written. Through the assumptions that UBY held, it was clear that they knew that their Blackness or their belonging to the Black collectivity rendered them undesirable in life sciences classrooms. The question that begs is how this was possible in a rainbow nation? As I tried to understand why apartheid was influential in a rainbow nation, Foucault's concept of panopticism provided an avenue (Simon, 2002).

Foucault presented the panopticon as a model that captured a shift in political practice from one under which there were overt spectacular displays of subjugation to techniques of surveillance whose functioning was more subtle and complex. The panopticon was an architectural structure and a way in which captives were arranged so that each of them could be observed by the warden without the warden being visible to them. The backlighting enabled the centrally located warden or overseer to pick out the captive silhouettes but the captives could not see the warden in the central tower. Foucault termed this the *eye of power* (Rouse, 2005). According to Foucault this spatial arrangement exposed the captive to maximum visibility and forced him to behave as if someone was permanently watching even if it was not necessarily the case. The individual in the panopticon was forced to internalise the disciplinary gaze and became the principal of his own subjection, a state which Youdell (2003) refers to as self-incarceration. Through this new form of internalised disciplinary practice it did not matter

who stood in the central tower, disciplination was still maintained with the same effect. Thus, through the panopticon a new form of subjugation was born, instead of power being enforced directly upon the body of the victim by the owner of authority, now the individual himself, played both roles. Even in the absence of the oppressor, because the victim has internalised the imposed behavioural code, he behaves as if the oppressor was always present. This arrangement enabled the disciplinary power to be absolutely discreet as it functioned permanently and largely in silence.

Apartheid, like Foucault's panopticon, towered above its subjects and through social institutions like the school, optimised its ability of surveillance and deployment of technologies of disciplinary power. Institutionalisation of apartheid and its permeation of all facets of life, guaranteed its power even after its official demise. Just as in Foucault's panopticon model, the absence of the warden in the central tower did not constitute the absence of power because the power to control was not in the tower but in the tactic of its construction. It was my view that through the panopticism of apartheid the constitution of UBY by NHS and life sciences teachers' structuration could be better understood. NHS was an apartheid institution and the life sciences teachers were products of apartheid education and from the classroom structure and positioning of UBY they wished for, it was my interpretation that they operated under the gaze of the power of apartheid. This is not a direct indictment of the institution or my colleagues. According to Youdell (2003) social institutions and individuals, through panopticism can operate from sedimented tacit webs of meanings that are rarely acknowledged and held as taken-for-granted common-sense. Such tacit subtle common-sense is the essence of their values and tacit assumptions. It is with this understanding that Gillborn (1990) contends that exclusionary practices may not be intentional on the part of the teachers, but rather a dynamic and complex facet of school life. However, my interpretation was premised on Gillborn's (1990) argument that teachers cannot be rendered inactive and exonerated for complicity in the persistence of such practices because their expectations and assumptions structure the classrooms in a particular way, which in turn bottle-necks educational opportunities for diverse learners like UBY.

More than two decades after the legislative demise of apartheid, the expectation within a CRP context is one of harmony between all citizenry in integrated contexts like the life sciences classrooms. Life sciences teachers working in such a context and in all other contexts are expected to have embraced the new dispensation and serve all learners equitably for social cohesion and nationhood. However, the assumptions held by life sciences teachers and the

artefacts they exhibited were different. Life sciences teachers operated with deficit notions about UBY, their academic abilities and social positioning. These notions led the life sciences teachers to structure their classrooms in ways that marginalised UBY and prevented them from accessing life sciences knowledge and their *capital* in a manner that re-consigned the context to South Africa's apartheid dispensation.

As observed in this study the structure of the context, in terms of marginalisation, was covert. This was not a surprise because Wang (2011) citing Foucault, posits that power deployment based on panopticism is more subtle through polymorphous techniques rather than spectacular shows of force. Making power subtle in the life sciences classrooms involved what Bourdieu (1988) conceptualised as symbolic violence through which agents like life sciences teachers concealed or disguised practices and rendered them invisible through reconstructing them as something else. During apartheid, power was deployed on Black youths through shows of force that included live bullets, teargas, dogs and school closure. In 2014, in the life sciences classroom under panoptic apartheid, power deployment was more subtle and involved rigorous unproductive testing regimes by Ms Perkins or UBY being made to go text-book hunting by Mrs Moosa. Selective exclusion of UBY from life sciences classrooms also included UBY being made to write the word punishment one hundred times, labelling and name-calling as cited by Magic, relegation of UBY to the back and the teachers being silent when correction or reproof was supposed to have been done. It was my view that in the latter technology, silence was used as a weapon of control and subjugation. In all these disciplinary enactments teachers were operating within the ambits of the code of conduct. In this way symbolic violence was perpetrated through the creation of a constraining social structure by misrecognition of purported legitimate boundaries as natural rather than oppressive, a process which obscured power and created a false consciousness or what Bourdieu (1988) calls *meconnaissance*. As they did this teachers perpetrated marginalisation as preservation of self-interests and justified the legitimacy of their enactments on the structure of the context.

For Foucault the panopticon does not only produce self-discipline and regularity but also individualises through the production of different identities in the subjects (Simon, 2002). Even though this is an unintended and unwanted effect of the initial disciplinary project, Foucault argues that the individual is not inert material on which power comes to fasten and subdue. Due to the polymorphic and delocalised nature of power, techniques of subjection and self-incarceration produce new forms of knowledge and through knowledge's duality with new modalities of power. As a result of the new modalities of power presumed subjects

unintentionally become sovereign agents who exert their will and deploy discursive practices. From historicity and citationality, Youdell (2003) posits that new populations like UBY emerge who are not subjects but unique populations with specific phenomena, peculiar variables and social niche. However, the newness of a population does not erase their constitution from prior historical discursive practices. Under this new constitution those misrecognised through new modalities of power adopt strategies and practices that position them within or distant from displays of power. Such practices and strategies are not a product of rules learnt by agents but are products of *habitus* or fundamental assumptions, some of which are historically premised.

The adopted strategies and practices may not necessarily be a repetition of historical reactions but fundamentally improvised enactments spurning the process of adjustment to the specifics of the social fields that subjects find themselves in. For example, under apartheid the Black collective was censured within and through social institutions. As an assemblage they were consigned to the townships where they were subjected to surveillance in order to be greatly controlled. According to Alexander (2003) human beings need security, order, love and connection and apartheid directly violated all. Neal (1998) in his version of lay trauma theory explains that the trauma experienced by the Black collective triggered radical emotional responses because cynical indifference was not an option. In response to their cultural trauma the Black collective adopted confrontational and violent discursive practices from which they recaptured their agency. Apartheid therefore did two things for the Black collective. Firstly, it subjected them to gaze of power and secondly, it made them a fighting people. Thus, the cultural trauma it generated became bound to insurrection and pre-emptive confrontationalism. It was in this context that a struggle was waged that led to the official and legislative demise of apartheid, but did not erase its script, hence my idea of its panopticism.

The ideas of the panopticon and cultural trauma were critical in understanding UBY enactment and why UBYC influenced life sciences classrooms disruptively. Apartheid, like the panopticon, placed Black people at the centre of the eye of power. Technologies of power deployment and institutional control mechanisms were poignantly directed at the Black collective more than any other race group. The Black citizenry was socio-politically invalidated and constructed as less than the ideal client (Gillborn, 1990). Curriculum focus in schools was aimed at normalising the Black learner through inculcating euro-centric cultural *capital*. The inculcation of euro-centric *capital* occurred at the expense of Black *capital* which shattered their collective's sense of well-being and self-worth. In the life sciences classrooms the teachers were not just experts, but operating from the panopticism of apartheid portrayed

themselves as the sole power wielders and representatives of not only the power structure of the school but of the power structure that set up NHS and had kept UBY out of this school for over five decades. Through this *modus operandi* the life sciences teachers propagated the cultural trauma inflicted on the Black collective through instituting discursive practices in their classrooms that constituted UBY as academically limited, subservient and deviant. For example, UBY were constantly under the gaze of power and consistently reminded of and subjected to the might of the code of conduct. Such a discourse constituted UBY as an inherent challenge to the life sciences teachers' authority and by extension the broader euro-centric white hegemony. By being constantly picked on and isolated UBY were subjected to the eye of power and the surveillance gaze of the teacher. These acts further constituted them as a challenge and trouble, and precipitated the deployment of more rigorous tactics of control. The Year heads and Mr Ogden were brought in and through their mediation and utilisation of sedimented discourses, UBY agency and identities were further shattered, practices which resurged UBY cultural trauma and reignited confrontational dispositions which UBY inherited from the Black collective. The classroom structure created by the life sciences teachers was culturally traumatising for UBY because it rendered their *capital* valueless and undesirable which like during apartheid compromised and denigrated their human nature. It is at this point that UBY through UBYC fought back, a response which explains the disruptive nature of UBYC as observed in the life sciences classrooms.

UBYC, like Black Consciousness during apartheid arose as a tactic for cultural trauma alleviation and a mechanism for regaining Black dignity. UBYC seemed to be a culture founded on new knowledge and a new modality of power in the life sciences classrooms which enabled UBY to live beyond the imposed constraining parameters in this learning context at NHS. The structure created by their teachers and their mediating discourse was associated by UBY as a reaffirmation of the traumatising past which prompted an inherited instinctive response to fight back. Out of school, UBY were the custodians of South Africa's democratic future and they had this critical consciousness. When they came into contact with the panopticism of apartheid in the life sciences classroom, past struggles seemed to have been reincarnated and UBY became evolved revolutionaries in school uniform. In this struggle, consistent with findings by Youdell (2003) UBY had only two choices to be pro-school or to be Black. According to findings on school discourse and practices at NHS, they could not be pro-school and still have a high Black status identity which came from fighting the establishment and perceived threats of subjugation. What was ironic with this finding was that

UBY believed that given a chance they could make meaningful contribution to the school with people like Top Dog making a positive impact. However, faced with the choice to be pro-school or being Black, UBY chose to be Black and participants in UBYC. Their choice of UBYC was based on the importance of the culture in the maintenance of their self-worth and the very sense of their *self*. Secondly, for UBY, by nature of their sorority, choosing differently was a betrayal to those of the Black collective who had stood against subjection and marginalisation on whose shoulders they claimed they stood. Thus, in the life sciences classroom UBY could not be pro-school or pro-White/Indian teachers because the former was the subjugating institution and the latter were the foot soldiers of part of a system that they regarded as violating their being. What is significant to point at this juncture from findings is that this conceptualisation did not mean that UBY were anti-school, but emphasises the power of the past in the construction of the present, a power which prevented UBY in life sciences classrooms from assuming a dual identity.

Choosing UBYC over being pro-school or their teachers, created a new relational modality which Foucault refers to as agonism (Wang, 2011). This new modality was the one that interfered with teaching and learning in the life sciences classroom. Agonism implies a relationship in which incitation and struggle reciprocate. According to Wang (2011) rather than face-to-face confrontation that paralyses both sides, agonism is a state of permanent provocation similar to competition, yet offensive and defensive positions are in constant flux. For example, in the life sciences classrooms, the teachers at one point were on the offensive and UBY on the defensive and these positions were reversed during the struggle. Both UBY and their teachers consciously and unconsciously reciprocated and exchanged their roles depending on whose *capital* had currency at what particular point in time. The aim of these struggles was not to attack a group, a class or the educational system but to fight for a form or for UBY against a historical form. For UBY it was also a fight against the normalising mechanisms trying to sculpt them into the ideal client. The struggles that were observed in the life sciences classrooms therefore had little to do with life sciences teachers wanting to instil discipline and wanting UBY to learn or for UBY, it was not a fight for rights, but the agonism was over the submission of agentic subjectivity to historicised rational normalisation.

A consideration of the agonism of life sciences teachers and UBY, exposed why UBYC influenced teaching and learning disruptively. The struggles that ensued and were waged in the classroom, negatively affected life sciences education. Learning time and opportunities were lost in the constant flux of agonism. The uncertainty created by not knowing from which angle

the offensive was going to come raised anxiety levels which led to feelings of aversion in both teachers and learners. Both parties approached the lessons guardedly, with a disdain and mistrust of the other, which inhibited fluid communication which is a critical element for a healthy classroom in the context of CRP. Thus, the disruptive influence of UBYC on life sciences needed also to be understood from the manner in which it constituted the life sciences classrooms as battlefield against the panopticism of apartheid which resurrected Black cultural trauma and caused a reincarnation of past struggles. With this backdrop, UBYC constituted UBY as part of the Black collective, thereby positioning them as evolved revolutionaries, instead of grade eleven life sciences learners at NHS. Cast in this role, feeling threatened and strategically positioned by UBYC, UBY disengaged from life sciences and became disruptive as they tried to mitigate a recurrence of their cultural trauma through teacher discursive practices that mediated reconstructions of the apartheid system. The influence of UBYC on life sciences teaching and learning needs to be understood through the way it positioned UBY in an enduring cycle of confrontation with their teachers foregrounded in historicity.

8.4 CONCLUSION

In this chapter my intention was to interpret findings and observations, and explain them in light of the existing theory. This was aimed at addressing the fourth research question. At stake was establishing why UBYC influenced the teaching and learning in the way it did. Three themes emerged: firstly, using Bourdieu's ideas UBYC, influenced the teaching and learning of life sciences in the manner it did because it re-constructed the life sciences classroom by making it a contested social field. The second theme from a Foucauldian perspective re-centred power and cast the life sciences classroom as a platform for power deployment and agentic expressions, some of which interfered with teaching and learning. In the third theme, explanations came from intrinsic motivation juxtaposed with organisational culture. In the fourth and last theme using Alexander's and Foucault's, postulates historicity and citationality were foregrounded to explain what was happening in the life sciences classroom. Using Foucault's panopticon and Alexander's postulate of cultural trauma I argued the persistence of apartheid and Black resistance; only this time the arena of the struggles is the life sciences classroom - a state which influenced teaching and learning negatively.

In the next chapter I attempt to chart the way forward, cognisant of the fact that UBYC has been deciphered, its influence explored and its operationalisation explained. What remains is what may be done with this knowledge and how may it be integrated into practices to

improve life sciences education in contexts like NHS, to better serve the culturally diverse agents in them.

CHAPTER NINE

CONCLUSIONS AND RECOMENDATIONS

9.1 INTRODUCTION

By accepting my colleagues call to look into the puzzling phenomenon in their classes, I found myself in the Mix, hence the title of this work. Not knowing what to expect this study became a blind exploration, however, thanks to the analytical and conceptual frameworks provided illumination. Despite not knowing what to expect, my focus was clear, I needed to interrogate the cultural phenomenon, which I labelled UBYC, as it manifested in grade eleven life sciences classrooms at a desegregated former model C school called Northlea High School. Integrating the crucible nature of the setting I found myself in, my focus (UBYC) and the research context the title of this work became “*In the Mix – Exploring Urban Black Youth Culture in Desegregated Life Sciences Classrooms*”. Four research questions facilitated this exploration:

1. What is the context at NHS in which urban Black youth culture develops?
2. What is the nature of urban Black youth culture, as observed in life sciences classrooms at NHS?
3. How does urban Black youth culture influence the teaching and learning of life sciences in life sciences classrooms at NHS?
4. Why does urban Black youth culture influence the teaching and learning of life sciences in life sciences classrooms at NHS in the way it does?

As I present conclusions to this work and try to respond to *challenges* raised by my colleagues in the prologue, I present answers to these research questions. In line with this approach I make conclusions about: - the context; urban Black youth culture; how UBYC influenced life sciences teaching and learning; and why it influenced life sciences teaching and learning in the way it did.

9.2 CONCLUSIONS

With regards to the context, findings were that the context was not culturally neutral. Other than not being culturally neutral, the context was also not a culturally-receptive space in which other cultures could carve a niche and allow participants in them to transact their capital in productive ways. The context was predominantly structured and reflected the teachers’ culture. Structured around the teachers’ culture, the context assumed dual instrumentality: that

of allowing only the teachers and those who embraced their culture to transact and profit whilst on the other end deny those who were culturally different from exchanging and transacting their cultural capital. Constituted in the way it was, the context came across as mono-culturally oriented and hence, non-responsive to diversity that came with desegregation. From conclusions about the context in this study, its centrality in structuring human discourse and discursive practices was established.

With regards to UBYC, it emerged as a culture and measured up to expectations of what cultures ought to be. With regards to the latter it proved to have utility in rendering UBY the capacity to adapt to perceived challenges in the context. Conclusion on UBYC were that the culture existed and had both adaptive and integrative utility for UBY. Through deciphering the nature of UBYC and confirming its authenticity I made the conclusion that UBY were agentic. By being agentic it became my conclusion that UBY had broken out of the mould of being *tabula rasa* / blank slates to be written on by significant others or empty vessels to be filled. This conclusion necessitates a paradigm shift in the way UBY are perceived in the context of teaching and learning, because inherent in this shift is an acknowledgement of them being self-determining co-creators of classroom contexts together with their peers and teachers.

In terms of the third research question, the conclusion from findings was that UBYC influenced the teaching and learning of life sciences in the classrooms explored. Without emphasising the disruptive nature of UBY premised on UBYC as observed at NHS, the major conclusion is that UBYC has the potential to influence how teaching and learning proceeds in classrooms. As hinted by Top Dog in this study, UBYC had the potential to positively or negatively influence classroom experiences depending on how the context is structured. Unfortunately, from this study UBYC scaffolded enactments that were disruptive, an aspect which does not diminish the acknowledgement of the inherent potential in harnessing UBY agency.

Theorising on why UBYC influenced teaching and learning led to the conclusion that UBY had myriad reasons for doing what they were doing. Such reasons or justifications for enacting stretched from social, emotional, psychological and politico-historical. Despite the myriad of explanations of why UBYC influenced teaching and learning in the way it did, my conclusion from this study was that UBYC influence emanated from the presence of two cultures with sets of non-negotiable yet divergent basic assumptions being in proximity. These cultures could not overlap or intersect by virtue of such fundamental constitutive difference.

My conclusion, thus, was that the real source of the puzzling phenomenon was the holding of divergent assumptions in a context where differentially perceiving, agentic individuals were expected to productively engage in a common educational endeavour.

Within Schein's framework basic assumptions cannot be changed or let go. The resilience of basic assumptions to change creates a problematic context in charting a way forward. How then can classrooms constituted by agents who hold non-negotiable parallel assumptions be made productive. Whilst most theses end with a salvo of recommendations, as I come to the end of this study I have no recommendations to give as a quick fix to facilitate the cultural impasse in desegregated classrooms. However, as I had the privilege of being - In the Mix, I feel there are some insights and lessons that I learnt, and as I learnt I feel obliged to share. I do this from a professional duty, moral responsibility and religious conviction that there is goodness in all mankind, we only need to scratch beneath our prejudices to see the gems. I also share this as a Black man, who understands the hyper-vigilance of the Black collective and their associated facades that function to mask vulnerability. This vulnerability is usually expressed as disinterest but actually functions as a tactic to hide disappointment and is not being fully included in dominant discourse. My hope is that from what I experienced perhaps somebody, being a free agent, can also learn and adapt my lessons to their own realities to better serve those who are different from them, all in the name of maximising learning opportunities for all in desegregated life sciences classrooms.

9.3 INSIGHTS FOR NEGOTIATING THE CULTURAL TERRAIN

From the thesis title '*In the Mix – exploring UBYC in Desegregated Life Sciences Classrooms*' - it is clear that my intentions were not to criticise my colleagues, whom I believe work so hard and whose intentions to provide optimum opportunities for learning, I don't doubt. Whilst contending for a culturally relevant pedagogy, Milner (2006) posited, "But good intentions are not enough" (p. 79), there is need for us to do something about UBY in life sciences education. This latter notion is the essence of this section in which I attempt to provide meagre insight into how the observed treacherous and conflict-ridden life sciences context can be made more productive. In taking this responsibility I am fully aware of the risks, one of which will be prosecution by critics for providing a one-size-fits-all approach in prescribing how UBYC need to be considered in life sciences education.

The common strand that traverses CRP as a conceptual framework is a compelling argument for all of us to move beyond the self-imposed restrictions that confine us to our

created worlds. The clarion call is for a viewing of spaces that impact on schooling as an integral part of the teaching endeavour. As found in this study, UBYC is one of the most significant spaces that is affecting life sciences education and a necessary space that we all need to explore, understand and embrace. The life sciences classroom cultural terrain in desegregated classrooms here represented by NHS was characterised by dynamic agonism generated from the perceptive frames premised on the fundamental assumptions that UBY and life sciences teachers held. Attempts at making the contexts more productive need a rethinking and reframing of the life sciences education in desegregated classrooms to help all parties involved manage their assumptions in ways that will limit or even eliminate enactments that limit opportunities for teaching and learning. However, movement into this space is a move beyond traditional classroom discourse. It is a move that involves negotiation of traditional constitutions of teachers and teaching. Such a change is a radical and revolutionary shift in practice. In conflict-ridden contexts, like the life sciences classrooms studied, such a shift cannot proceed without carefully considered negotiation lest interventions are misconstrued as further violations and make the situation worse. It is with this understanding I aptly included “negotiation” in the title of this section. Negotiation for me is both an inter-relational discourse as well as reflexive engagement within oneself, having a two-sided quality, looking both inwards and outwards. It is my view that the whole purpose of negotiation is not to facilitate the evolution of a common narrative but a reductive transformation of agonism to enable UBY and their life sciences teachers to co-create insights that alleviate their defend-attack enactments.

In thinking of a response for my colleagues, I began to envisage the reframing of life sciences teaching and learning in transforming contexts. In the following sections I present aspects that practitioners need to know in order to deconstruct UBYC and optimally serve UBY as well as those who may be different from them. These aspects that practitioners need to know are analogous to Bourdieu’s *thinking tools* and I deemed them important for negotiating the treachery of cultural diversity in the context of desegregation. Under the major theme - what science teachers need to know. I drew out four sub-themes which serve as sub-headings for the following sections on what teachers need to know. Themes include what science teachers as practitioners need to know about: UBY as learners; UBY and life sciences; UBY and teaching; and UBY and us as UBY teachers. These insights serve as recommendation for practice emanating from this work. Based on lessons learnt and insights gained, I will conclude this work with a generic model for negotiating the mix.

9.3.1 About UBY as our learners

We need to know the following about UBY as learners. UBY are not just individual actors but are powerful social agents. From the study it was clear that UBY live their lives within networks of relationships that are meaningful to them and from which they generate their own sense of *self*. As powerful social agents UBY are capable and responsible for their enactments and are also conscious of how others respond to them and tend to relate to others in ways that both generate and re-affirm UBYC. As in this study, UBY raised their voice against school and classroom structure that they perceived to be constraining and not satisfying their psycho-emotional needs. Through raising their voice UBY avowed UBYC as their source of power and an interpretive lens through which they viewed the world around them.

In the cycle of life UBY were at the Encounter Stage – a stage in which they commence to introspect, reflect and confront who they are in the context in which they are constituted as strange and different (Tatum, 1999). It is Tatum's belief that as part of the psychology of becoming Black during the encounter stage UBY begin to grapple with what it means to be part of the Black collective. As both actors and respondents within an interactionist framework, UBY during the encounter stage experience conflict from their reflexive experiences of threats to their deeply held desires, values or patterns of normative expectations (Melchin & Picard, 2008). In response to these confrontations and struggles between self and the world, UBY embrace negative stereotypes or execute enactments which are performative and not who they truly are. For UBY the negative casting of UBYC is believed to render them a more desirable and superior identity than the Black collective identity they are designated by others.

What I observed and learnt about UBY and UBYC was that the latter was less the product of differential treatment than it was of *estrangement*. From the co-generative dialogues, UBY statements suggested that they were an estranged population rather than having being constituted as strange. Despite their espoused values their words indicated that they interpreted their social and academic experiences as evidence of malevolence or neglect of their teachers. It was in this context that UBY regarded themselves as a product of the structure that the teachers created and as such so was UBYC. What we need to know is that if the contextual status quo as observed in life sciences persists, UBY are mostly likely to continue to perceive life sciences classrooms as social fields that expunge their affinity for learning and creativity which they enjoy outside of this context both within and outside the school precinct. Thus, we need to realise that UBY choose UBYC over contexts they feel estranged of and do not allow

them to be their true *selves*. Choosing UBYC re-asserts their *self* even if it as odds with the school institution. The walking out of class, non-verbal expressions including the ice-grill, were all conscious enactments that re-asserted and affirmed the *self* despite its non-recognition and acknowledgement by the school and their teachers.

We need to know that through UBYC, urban Black youth improvise and attain visibility by which they are empowered. Through rendering visibility and communitarian attributes UBYC becomes appealing an aspect which guarantees its transmission across generations. Through the improvisatory nature of UBYC, UBY have the capacity to adaptively evolve within contexts as they connect to novel realities. UBY through this quality of UBYC instantaneously execute enactments that affect communities which they are part of. This is important to know because it is way off the dominant stereotypic constitution of UBY which has crippled innovation in pedagogy and policy. This lag in innovation is responsible for the constitution of UBY as trouble and challenging constitutions which cause their disengagement from life sciences. Such constitutions blindside teachers from realising the need to acknowledge and explore the potential of UBYC in improving classroom experiences as they try to press-fit UBY into their mould of the good, normal students.

Recognising the historicity of the present (Kane, 2012) it is important for us to know that UBY enactments in our classes are embedded within existing social discourses and practices yet are subject to historical socio-cultural forces. UBY enacting and agentic expression is thus a blend of past, present and aspired for reality. Thus, who UBY are in our classes is a present-constituted *self* that embodies historical understandings. The implication of this constitution is that what as teachers we may be confronted with is not of our making but a *self* who is a product of historical accumulations and positioning. The process of negotiation should therefore be chronologically holistic in addressing the past, present with a futuristic projection.

We need to know that UBY have a communal nature. They share everything, they all don't need to have a textbook; ruler or eraser, for what belongs to one is for all. They speak alongside each other when responding or interject and qualify each other's responses, something that as teachers we are not comfortable with. For us as teachers we desire individual responses as they allow us opportunities to evaluate individual understanding. However, the communal nature of UBYC does not allow other UBY to sit back and let one of their own struggle with the question. Thus, for UBY questions are opportunities to affirm the power and benefit of their connectedness. This is crucial as it helps us as teachers understand why some

of our UBY freeze mid-sentence when we ask everybody to be quiet. The other important thing with regards to chorus responses is that they allow all UBY to make contributions to classroom discourse without the risk of being disempowered in the event that they get the answer wrong or flop English. Other than buffering UBY from disempowerment speech and speaking overlaps can also be regarded as express indicators of interest and motivation, even though the enactments can be regarded by life sciences teachers as *un-science* as they emphasise regimented orderliness. We therefore need to know that overtures in trying to curb these UBYC enactments cause agonism and expunge UBY affinity to be involved in life sciences classroom activities. However, infusing UBYC communal structures in our life sciences classrooms has the potential of encouraging academic collegial engagement and achievement as it alleviates the trauma associated with the exclusion of the out-of-class *self* and the expected embrace of ideal in-class *self*. Such a structuring of the context therefore realigns classroom discursive practices in ways that do not create the need for UBY to enact in ways that limit their learning opportunities as they try to affirm their autonomy and connectedness.

We also need to know that UBY are creative and inventive and always come up with creative ways and avenues to articulate their voice. An awareness of this is important because teacher understandings need to transcend the obvious orthodox interpretations and harmonise UBYC and life sciences education. It is within this context that we need to embrace the value of co-generative dialoguing as we re-constitute our learners as active and perceptive organisms. On a platform of co-generative dialogues, traditionally instituted teacher-learner boundaries are disrupted as the two co-create productive and mutually beneficial educational contexts. We need to know that this is not a comfortable endeavour due to feelings of disempowerment that may come as teachers traverse traditional boundaries and reach out to activate UBY cultural capital. However, despite the discomfort it is important to know that such overtures are an imperative in diverse desegregated urban life sciences classrooms. On a co-generated platform it becomes possible for teachers to gain insight in how our UBY learners navigate life's obstacles, as well as their rituals, insight which is necessary to harmonise our pedagogy with them in ways that allow all cultures to transact in ways that do not impinge on teaching and learning.

9.3.2 About UBYC and life sciences

As I discuss UBYC and life sciences, I use the term *science* and life sciences interchangeably because in literature the term *science* is used in reference to all major natural sciences disciplines. So when I use the term science it will be in reference to life sciences.

It is important for us to know that science is a culture and is not culturally neutral. It is a culture because it has its artefacts, values and tacit assumptions and as such fit Schein's criteria for culture. On the basis of its tacit assumptions science has its *figured world* (Kane, 2012) or what Emdin (2010) refers to as the "scientific picture of the world" (2010, p. 30). With regards to science not being culturally neutral, we need to know that science as we know it and as it is taught in classrooms is a western canon (Jegade, 1996; Ogawa, 1989). With this knowledge we also need to know that non-Western learners like UBY find science to be foreign, irrelevant to their identities or repugnant to their social sensibilities (Cobern & Aikenhead, 1998; Jegede, 1996; & Aikenhead, 1996). Despite latter findings, what is important for us to know is that science is a worldview, a way of making sense of the world and an enquiring response to the physical and social phenomena just like UBYC. This aspect connects UBYC and science (in this study to life sciences). Thus, it is important for us to know that as we consider UBYC and science it is a consideration of cultures and cultural interaction.

The connection between UBYC and science can be seen when they are both considered as cultures. Both are worldviews rooted in the fundamental assumptions of different groups. Both arose and progress as instruments of adaptation and integration. Both rely on creativity and improvisation. For UBYC these attributes structure their world and provide them with voice. For science the two attributes are an imperative in addressing human survival challenges. The structure of UBYC and science is not constraining as they both allow reflexive adaptability and dynamism in individuals who participate in each of the cultures. Both cultures are fundamentally distinct ways of knowing accessible to all people. As a synopsis of the connection of UBYC and science, Emdin (2010) is of the notion that from an Apollonian point of view "both aim for an understanding of the world; both appear to be part of an understanding of the world; both appear to be part of an all-embracing culture of enquiry, a search for all forms of truth" (p.30). What emerges from this brief discussion is that there is no inherent conflict between UBYC and life sciences that warrant attribution of challenges encountered in the teaching and learning of life science to the former. It may be fair to say if we only knew this pedagogical potency of UBYC we would not perceive it as a threat to science and UBY as

anti-science. We need to know that the common and dominant discourse that labels UBYC as anti-science perpetrates a fundamental attributional error that positions UBY in ways that trigger enactments that disregard the discipline and limits their opportunities to be productive.

There is more that connects UBYC to science than purported by the popular notion that non-Westerners have cultures that interfere with learning. From this study it is my view that the way in which UBYC intersects and overlaps with science should be qualified. An important contribution from Snively and Corsiglia (2001) disrupts the dominant discourse by qualifying that it is possible to increase non-Western learners' understanding and appreciation of Western Science without altering their cultural inclination as it is not the content that matters but rather the methods or the structure of the teaching and learning context. This is fundamental because as teachers we need to know that it is possible to teach UBY scientific concepts whilst they hold their tacit assumptions without the need to firstly assimilating them into the euro-centric culture, as suggested by Ms Perkins. Just as the call I made about the possibility of life sciences teachers getting to know their UBY, here my argument is that we need to know that as UBY learn science, it involves a mastery of its ritualistic artefacts, acknowledge its espoused values and integrating its basic assumptions in their cultural schema. We are reminded by Schein (2004) that the processes of mastering, acknowledging and integrating another culture may be psychologically unsettling. We therefore need to know that as our learners grapple with science, they are involved in inevitable cultural dissonance associated with a reorganisation or reconstruction of their basic assumptions. Success in all these endeavours depends on how teachers structure the context to minimise the trauma and anxiety associated with cultural dissonance.

9.3.3 About UBY and teaching

As I consider what we need to know about UBY and teaching there are four propositions that need to be foregrounded. Firstly, there is need to acknowledge that science is a culture (Cobern, 1996); secondly, as alluded to above, we need to recognise that science learning is a meaning-making process that engages learners with who they are and where they are going (Stairs, 1994); thirdly, as established in this study, urban public school teaching is a culture with assumptions grounded in history and some commonly held fundamental assumptions and lastly, the teacher is facilitator in meaning making (Aikenhead, 2000). From acknowledging these four propositions and with the knowledge that we have about UBY, the challenge is how pedagogy should proceed in the light of divergent assumptions held by parties within context

as in life sciences classrooms in this study. I raise this challenge from an informed understanding that the status quo vis-à-vis pedagogy is unviable let alone productive as brought up by my colleagues in their sentiments that I mentioned in the prologue of this study.

We also need to know that the dominant belief observed at NHS which may also be existent in urban schools like NHS, is that UBY require teaching environments that are hyper-structured with rigid classroom management. Emphasis in urban life sciences classrooms as observed in this study seems to be on content dominance and learner invisibility. What is disconcerting is that UBY find themselves in this context that is associated with the teaching culture that is stoic, fact-laden and classrooms that are undemocratic. We need to know that in this context of teaching, UBY stand in opposition to these beliefs and by being participants in UBYC stand ready to subvert the status quo. This is the terrain that needs to be negotiated. In order to effectively negotiate the cultural terrain in contexts like the one I encountered at NHS, there is need for culture-conscious pedagogy or what I regard as Responsive Culturally Relevant Pedagogy (RCRP). What we need to know is that there is pedagogic potential in all learner experiences whether positive or negative, depending on the lens we use to perceive them. Thus, rather than striving for normalisation that results in the marginalisation of those who exhibit unacceptable behaviours, RCRP entertains the notion of a classroom structure that transcends the corporate model to democratic ones in which approaches to instruction are scripted on distinct aspects of UBYC. For example, their love for story-telling, debate, music and communitarianism can serve as pedagogical tools which will create and maintain communal structures in the life sciences classroom. In these ways teaching is aligned with the UBY figure-worlds. Integrated this way UBYC becomes part of science and teaching and learning ceases to be assimilative or misconstrued as *capital* loss by UBY, but rather an extension of their agency.

Whilst acknowledging UBY agency it is important to know that UBY through UBYC have ideas on how teaching should proceed. Like they hinted during co-generative dialoguing they felt that they would learn life sciences if it was packaged differently. UBY see themselves as passionate and emotional about all that happens in their life and what captures and triggers their agency has to appeal to these two domains. We therefore need to know that if our teaching is packaged differently they will become everything else other than receptive of science culture. With the realisation of the indispensability of UBYC in instruction, it is imperative that teaching needs to proceed from an acceptance of what UBY are in science classes. Placing

value on who they are and not necessarily what they bring from their out-of-school community is a necessity for making these spaces productive.

There is need to know that embracing RCRP and accepting UBYC comes with an element of disempowerment as it requires the teacher to relinquish his or her expert and enforcer role and adorn vulnerability. The teacher has to come from the pedestal where the propositions above and their associated beliefs have positioned them, as such a positioning places science teaching in opposition to UBY. To effectively negotiate the cultural terrain teaching therefore has to be transactional and the classroom context has to be co-evolved as learners *school* the teacher in UBYC, whilst teaching facilitates UBY access to science knowledge. In making attempts to know what makes learners like UBY who they are, restrictive barriers and constraining classroom structures are re-configured and replaced by communal classroom spaces which are more productive. Thus, negotiating the cultural terrain entails teaching without fear of exposing one's vulnerabilities, discomforts, assumptions and ignorance with an aim of establishing what Senge (1994) regards as *learning teams* in the life sciences classroom. What emerges from this negotiation is a context in which teaching is structured as mutualism in which all parties interact and benefit. However, to get a classroom constituted by learning teams, the shift one has to make is to begin with a deconstruction of UBYC and regarding UBY as *experts* too, as UBYC is an area in which pedagogy has not yet tapped into for its transformation and advancement. We need to know that this shift in teaching approach is not a smooth one. A lesson learnt from dialogues with UBY was that loyalty and trust has to be earned and built. Gaining the two involves a deliberate and consistent searching for understanding whilst showing *respect, empathy* and *love* for UBY. Genuinely pursuing UBY with the three attributes as learnt in this study leads them in ways that will render you access to UBYC. As explained by Top Dog in my interview with him UBY await teachers' engagement and all that's needed is a democratic space and genuine non-exploitative loop-sided symbiosis. In a context Top Dog intimated that teachers do not have to worry about classroom management because this culture comes packaged with a customised hierarchy that teachers can even use to co-teach and galvanise for defence when enactments become disruptive.

What we need to know therefore is that UBY call upon teaching to adopt UBYC artefacts and values in life sciences teaching as well as consideration of its tacit assumptions in structuring the life sciences classroom. We need to know that to effectively negotiate the cultural terrain teaching has to reconfigure existing cultural hierarchies which position UBY

and UBYC at the lowest rung below teaching culture and science culture to a structure which has a multiplicity of *normal* or *ideal*, as there are realities. Such teaching overtures position UBY on the same rung as all other parties in the life sciences classroom, a structure which both enriches the context and makes it democratic and equitable. What makes this RCRP context productive is the birth of a shared vision and common understanding between all in the context. I hasten to point out that at this point we need to know that sharing a vision should not be mistaken for convergence of tacit assumptions. The reality that I am entertaining in RCRP is that when negotiation has been effective it is possible for individuals who hold oppositional assumptions to work together through a shared genuine vision. Genuine vision in this case entails holding a shared picture of the organisation's pursuits (Senge, 1994). It is my belief that through negotiation, teaching premised on RCRP can generate a genuine vision through which all learners excel in learning, not because they are compelled, but because they intrinsically want to. Through negotiation collective endeavours of all parties can be galvanised to foster genuine commitment and involvement, rather than compliance. We need to know that this should be the essence of teaching in desegregated life sciences classrooms.

9.3.4 About us, as UBY teachers

I write this section as a teacher and as a Black man who at one point was an urban Black youth in a school like NHS doing Biology (now termed life sciences). Before I discuss what we need to know about UBY and their teachers I begin this section by presenting what we need to know about ourselves, as teachers, things which I believe are pertinent in us assuming the role of effective negotiators or to progress to be responsive-culturally-relevant pedagogues.

Firstly, we need to know that we do not and cannot stand outside our work station as we are always a part of that environment. From this positioning and from lessons learnt in this study we need to know that we are responsible for our environment as it is a product of our reflexivity and agency. I use the word responsible unreservedly because we need to know that we are responsive as well as purposive actors whose agency generates responses that have consequences for ourselves (Melchin & Picard, 2008). We can therefore not be exonerated or wash off responsibility from what transpires in our work stations even though at times we may not be aware of the unintended consequences of our action. As we act, our motivations are not just internal but emanate from our cultural relationships from which we derive our identities. It is within this context that I posit together with Melchin and Picard (2008) that cultural relationships inform and govern our perceptions and determine what matters to us and our

dispositions. Thus, as cultural beings we need to know that by virtue of our tacit assumptions we have an interpretive framework which we need to transcend in order to effectively serve those learners who are different from us like UBY in this study or whom Duncan (2002, p. 131) regard as “*Beyond Love*”.

As we explore the possibility of negotiating the cultural terrain, the first thing we need to know is that we need to pay attention to our own tacit assumptions and beliefs as these direct our thought processes, our motivations in the classroom and how we structure the context. Such critical self-reflection for Milner (2006) is an imperative if we are to serve UBY better in life sciences. Such a reflection entails in-depth introspection that exposes our inconspicuous attitudes, issues and dispositions that are located beyond the conscious realm. This in-depth introspection should not only foreground the individual’s inconspicuous phenomena but should be a relational reflection on what we intently think about our own basic tacit assumptions juxtaposed on those whom we serve. We need to know that such an activity, as a first step in preparing us for negotiation, increases the scope of our reflections and unravels unobtrusive but fundamental assumptions which may be deeply in-grained. It is important to know that as we authentically reflect we begin to grapple with genuine obstructive features in the cultural terrain and by bringing them into consciousness, we are simultaneously prompted to restructure our practices. Thus, we need to know that instead of seeing ourselves as *experts* with a superior knowledge, we should acknowledge the agency of all our learners, particularly those different from us and together with them create a mutually beneficial structure in our classrooms in which everyone is free and productive. Such mutually-beneficial positioning requires constant and consistent authentic critical self-reflection, a notion perfectly captured by Freire (1998) when he posited that freedom and completeness is not a condition located outside of man. We need to know that as we introspect in pursuit of change and ask ourselves why we believe what we believe?; how our assumptions influence our teaching of UBY?; what is it that we need to change to better serve them?; what is the nature of our prejudgements vis-a-vis UBY?; and how do these prejudgements influence our teaching?, we achieve a completeness that equips us to navigate and negotiate the cultural terrain in our diverse classrooms. Such a self-reflective critical analysis provides an insight into how we have come to be who we are and therefore how to properly engage with UBY or learners different from us.

Another thing that we need to know as teachers, concerns our disposition towards UBY. Once we know ourselves better I think we need to do and act better, especially in the nature of relationships we have with UBY. One lesson I learnt from co-generative dialogues was that it

is possible to have a highly productive informal relationship with UBY from which cues and tools for teaching can be obtained without any loss of power. From co-generatively dialoguing with UBY I assumed a more productive and inclusive identity that was less pre-occupied with safeguarding my moral authority as I made understanding UBY my focus. However, to come to a point where we can co-generatively dialogue, there are things that I feel we need to know. Firstly, we need to know that we are products of socialisation and schooling that constituted us into detached, cold and objective science teachers. This constitution separates us from the artistic, subjective and humanistic world of our learners. This is the prototype that we need to transcend in order to co-generatively dialogue. Secondly, from a critical perspective we have been socialised that: “we cannot identify with or love anyone who is different from us; we perceive the *other* to have little to offer us; and we regard the *other* as something that disrupts and destroys whatever it comes into contact with” (Duncan, 2002 p. 133). As we negotiate the cultural terrain we need to be aware that UBY have been historically constituted as an oppositional strange population when compared with other learners. Through their positioning and constitution as the *other*, UBY are perceived by their science teachers, as learnt in this study, as different, strange and therefore were at times granted little or no consideration in teaching and learning activities. From this constitution UBY are described as suffering from a condition which Duncan (2002) diagnosed as *beyond love*. This is a condition for those excluded from networks of care and are therefore expelled from useful participation in social life which includes the life sciences classrooms. With this understanding it becomes clear that negotiation of the cultural terrain needs to proceed beyond professional workshops and other compensatory programs to explore possibilities within the moral dimension. The latter is the essence of responsive culturally relevant pedagogy. Through unbridled immense *CARE* science teachers in this context drop the notion of constructing difference as strange and love those of their learners who are *beyond love*.

A common notion that dominates themes under CRP is that the ability to generate and sustain good inter-personal relationships in classrooms is a necessary attribute for CRP pedagogues. According to Brown-Jeffy and Cooper (2011) the teacher is a significant other and as such the nature of his relationship with learners is critical in promoting their learning. According to Gay (2010) with the above understandings, teachers need to know that there is a synergy between the classroom structure that they create and cognition as the latter is culturally influenced and experientially situated. Thus, fluid, equitable and personal relationship between learners and their science teachers are an imperative for negotiating the cultural terrain in ways

that enhance productivity in classrooms rising from a divided and culturally-marginalising past. As teachers we need to know that learners *need* to know that we care and love them as well as respect them for who they are as individuals as well as participants in distinct cultures like UBYC. According to Brown-Jeffy and Cooper (2011), love for learners is demonstrated through patience, connectedness, nurturing, communication, appreciation, and persistence. Through these traits it becomes possible for teachers to form better professional and personal relationships with their learners, a bond which is crucial in the maintenance of high standards for excellence and equity. It is important to recognise that the atmosphere generated from such sound interactive patterns causes a convergence of interest with learners wanting to learn and teachers succeeding in teaching. Once trust and communication has been established it even becomes possible to be demanding, because failure ceases to be an option. In such a context we need to know that we can be, according to Gay (2010), demanding but facilitative, supportive and accessible without accepting failure since we begin with who our learners are, where they are and work hard with them to succeed. Our motivation and impetus to work hard in this context does not come from professionalism but sprouts from much deeper locus beyond the conscious and appeals to conscience. The locus of this motivation as affirmed by Brown-Jeffy and Cooper (2011) is the consciousness of our learners as our children. The scholars contend that if we managed to go beyond concern and enforcing conformity in our classrooms and interacted with our learners as our own children, we would witness more success with a greater numbers of learners. As intimated by UBY in the dialogues we need to know that as we position ourselves within *care, love, respect and empathy* our learners are more likely to see them as *real* teachers and are therefore more receptive to what we want to teach.

Loving those who are *beyond love* does not come automatically but according to Sealy-Ruiz and Greene (2011) it requires the cultivation and nurturing of what they have referred to as *habits of mind*. They suggest seven habits that, I believe ourselves as teachers of UBY, need to develop. Such habits include: daily appreciation of learners' cultures and the diversity they bring to the life sciences classroom; encourage learners to connect to their culture; understand that our assumptions can influence and affect our learners; preparedness to allow our learners to explore their interests in the classroom setting; helping and encouraging our learners to feel good about themselves and address their interests; value our learners communities in meaningful ways; disposed to listen to our learners and being conversant in what interests them; getting involved in what our learners enjoy doing; and being available to mentor and chaperon them. Through these habits of mind it is possible to transcend the self-imposed limits, embrace

our learners' culture and encourage successful social and academic outcomes for them. Embracing these habits of mind does not entail a wholesale imbibing of all cultural elements of UBYC, but rather we need to engage with all cultural aspects and engage with UBY in constructive dialogue in the context of educational success. Sealy-Ruiz and Greene (2011) are of the view that such an engagement which takes our learners as who they are and assisting them negotiate their pathway to their success, is a time-honoured pedagogical strategy.

The above discussion is not an attempt at minimising the disadvantaging and gate-keeping nature of school structure. What I want to re-affirm in line with the general scope of this study is that despite the existence of the marginalising super structure, it is possible for teachers, in the micro-context to help UBY make transitions in navigating through purported dominant cultures in ways that allow them to succeed and simultaneously change the terrain. According to Delpit (2006) we need to constantly remind ourselves that schools have a hidden curriculum for all involved in it. However, the call being made by our learners through their enactments is that they still want to be in school but their realities need to be accommodated. Responding to this call should never be optional because inherent in our responses is our professional survival and relevance. Fully aware of the power dynamics of the macro-context and its contribution to the status quo, we need to acknowledge that seating at the table of power is limited or non-existent for UBY. However, subverting the status quo at the macro-level is within our power. My plea as I conclude this work is that as teachers we need to acknowledge UBY agency and extend opportunities for them to partake at the tables of power. Invitation of UBY to the tables of power should not be done in the spirit of reparative empathy but through conscious and voluntary acknowledgement of their power and agency and as critical players in the science classroom. It is important for us as teachers to realise that all individuals, whether teachers or learners are powerful *experts* on and about their experiences. Thus, in our negotiation of the cultural terrain our role needs to change and as we reject the top-down pedagogy which evolves from the banking theory (Milner, 2006) in which we are depositors of knowledge and our learners are depositories who patiently receive, memorise and repeat. In the utopia of RCRP I entertain a new notion of power which entertains a structure that facilitates smoother cultural negotiations. In this context our role as teachers becomes that of asking the right questions and helping our learners locate answers to questions and areas of interest. My view is that in these exercises, communal classrooms can be created in which there is dynamic interaction with minimum power operationalisation and room for creativity and knowledge promoting enactments. We need to know that the creation of these communal classroom spaces

needs us to be brutally honest with our learners in explaining how power is ingrained in the social fabric and how it operates and manifests. It is only from such conversations that our learners develop the ability to understand, negotiate and navigate through the culture of power. Knowing the constitution of power, its modus operandi and how it is acquired are important competencies for our learners in the science classroom and the responsibility of teaching this culture of power is part of our calling as teachers. My view is that when power has been deconstructed as envisaged in RCRP, team learning becomes possible and our learners' needs for autonomy, competence and connectedness are addressed.

From the discussion in the above paragraphs of this section an emerging notion that we need to know and embrace is that teaching is more than an academic endeavour, but a socio-political calling. The porosity and fluidity of the socio-political space therefore necessitates that teachers become learners of their learners to be able to innovate in meaningful and productive ways. In this context and as constituted within RCRP, teachers practice disciplines. Senge (1994) regards a discipline not as “enforced order” or punitive technologies, but a “body of theory and technique that must be studied and mastered to be put in practice” (p. 10). Implied in this conceptualisation is the notion of discipline as a developmental path for acquiring certain pragmatic competencies through practice. Thus, for teachers to practice a discipline entails creating learning atmospheres and holding diffuse ever-evolving mental models. Such mental models serve as precursors of practically-nuanced epistemic advancement. What we need to know is that in such a state, teachers as learners cease to be separate from the worlds of their learners and begin to actively interrogate how their actions may be contributory to the socio-political challenges that they experience. In this state teachers become enmeshed in learning cycles of their learners' cultures.

The challenges that emerge from the discussion above are, what constitutes these learning cycles and how do teachers learn their learners' cultures in classrooms? From experiences as I researched UBYC, insights gained in dialoguing and postulations from the analytical framework, I propose a learning model that can be adopted as teachers practice disciplines. After conducting this study as a focused ethnography, I saw the possibility of teachers researching culture in their classrooms and instituting accommodative adaptations to increase learning opportunities for all learners. What was needed was a tool to facilitate these localised cultural studies. Cognisant of the porous and dynamic nature of culture this tool had to be cyclic thus allowing for learning cycles. I have named this model the LEAP approach and have structured it as in figure 9.1 below.

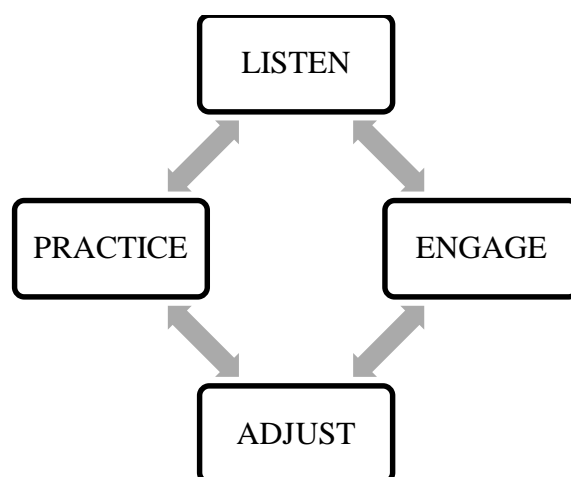


Figure 9.1 The LEAP model – a culture-learning tool in classrooms

The cyclic nature of this model invokes the spirit of practicing disciplines which is premised on constant and consistent lifelong learning. In the following discussion I explain the model as a culture-learning tool available for those who may find themselves in the Mix.

From Schein's (2004) analytical framework culture has artefactual manifestations. The first step in learning our learners' culture should therefore involve capturing these artefacts. I have used the term *listening* to symbolise the nature of the process of capturing what unfolds and physically manifests in a classroom. In his work *The Lost Art of Listening*, Nichols (1995) conceptualises listening as having two purposes: information intake and the privileged witnessing of another's experiences. Applied to this model, this view of listening has two implications. Firstly, it speaks of the process of listening and secondly, the posture of the listener. As a process, listening is an active process associated with paying attention, giving cognisance, being prompted to act, giving due recognition, taking interest or an enduring immersion in another person's experiences. Listening as a process in this model therefore involves the raising of the teacher's antennae to enactments and words, spoken and unspoken in an attempt to dig and capture what is being conveyed. It is the sensory legitimation and recognition of manifested artefacts. In terms of posture, the teacher's enactment of listening is premised on being a witness and not on evaluation. Assuming this posture, listening is activated and sustained by the need for connectedness. Humans connect with each other as what Kohut (1971) has termed *self-objects*. Self-objects are empathetic responsive others who without any ulterior malicious motive relate to us and are there-for-us. In this posture, teachers empathetically escape their isolationism, suspend their basic assumptions and enter into the

world of their learners' experiences. Listening therefore requires both effort (as a process) and is intuitive (as a posture).

The second stage in the learning cycle is engagement. After gleaning the artefacts and having suspended his or her basic assumptions, the teacher needs to establish the learners' culture or basic assumptions inherent as captured in stage one. Whilst Schein's framework establishes cultural understanding by inference, in this model it is important for teachers to solicit meaning from the enactors. This calls for a dialogic engagement. Dialogic engagement involves what Senge (1994) conceptualises as a "genuine thinking together" (p.10). Rooted in Greek mythology, this process involves the teacher creating group or individual opportunities for discussing observed artefacts. A lesson from co-generative dialogues is that groups work better as they allow a broader meaning-making process through which insights not obtainable individually, to be obtained. In such engagements there is no winner as the focus is on building self-sustaining, mutually-beneficial learning communities in the classroom. From dialogic engagement based on mutual respect, trust and fortified relationships built in stage one, learners can disclose their cultures. The important thing in this stage is that learners yielding and opening up about their true *self* may take time, and will involve prolonged listening. However, the reward is bi-pronged: it results in the teacher developing a cultural understanding of the learners and secondly, it creates communal classrooms as the teacher and learners share a genuine vision of improving their co-created context. Thus, through dialogic engagement there is an excavation of cultural meanings through enrolment and not enforced conformity.

The third stage is adjusting. After engagement the teacher adjusts his or her basic assumptions. Within Schein's framework, this is the most difficult stage as it involves transformation of basic assumptions. It is a stage that is associated with psycho-emotional dissonance and a lot of anxiety as the teacher breaks out of the mould of traditional discourse and begin to entertain other innovative possibilities. Insights gained in this study point to teachers overcoming the trauma associated with this stage based on the possible reward of adjusting and the challenges of complacency. Thus, the enduring of the trauma associated with accommodating our learners' cultures, within our cultural schema only comes from the realisation that such a process is a survival imperative for the teacher. However, it is important that at this stage after committing to listen, the teacher would have also committed to empathetically sacrifice his or her *self* for the learners. The power of empathetic listening overcomes the inertial resistance of assumption suspension or transformation in that listening

strengthens relationships and generates assurances about connectedness and humanness, attributes which will compel the teacher to adjust.

The last stage is practice. In this stage the teacher creates the learning atmosphere that addresses the learners' need for intrinsic motivation. As the teacher practices, new intervention waves are set up as she / he listens to learner artefacts. In this way practices become associated and feed into another listening cycle and the learning cycle continues.

My hope as I propose this model is that **leaps** can be made in ways that culture is integrated in the classroom. I acknowledge that at national and provincial levels of government policy frameworks exist and this tool can contribute in the translation of the policy yearnings into reality as all our learners, in their diversity have their learning opportunities maximised. I hope this proposed model will make Responsive Culturally Relevant Pedagogy less abstract as teachers become responsive ethnographers in their social fields to better serve those in these spaces.

9.4 PARTING SHOT

As I come to the end of this journey, I look back like a sojourner and relish the strangers I met along the way some who became friends. I am also nostalgic of the anticlines that I plodded up and the reluctant jog I undertook as I went downhill. However, what pains a sojourner are the irking feelings of missed opportunities along the way. These irking feelings flood one's intellect with what could have been questions and sustain thoughts of how the journey could have turned out if I had yielded to some inklings. As I conclude this work I also labour under such thoughts on two fronts. On one, wasn't it going to be more fruitful if I had gone beyond espoused values in my exploration of the macro-context (NHS)? On another front wouldn't it have been more enriching to have also featured the voice of Black learners who were not part of UBYC? Even though I subdue these thoughts with plausible philosophical justification, I still harbour the conviction that given another chance I would push the epistemic frontiers on these two fronts. I am convinced gleaning NHS basic, tacit assumptions would have extended the understanding of the context in which UBYC was developing even though my focus was on the life sciences classroom. On the second front, it is my notion that raising the voice of Black learners who were not part of the UBY collective would have revealed the evolutionary process that yielded UBY. Maybe such an exploration would have opened our understanding on how to transform the context to better serve all our learners. If I were to

undertake this study again, its complexion would change in this regard even though the spirit would stay its course in establishing and explaining the phenomenon raised by my colleagues.

9.5 CONCLUSION

In this chapter I presented my conclusions and through what we need to know, I made recommendations that predominantly have implications for practice in classrooms. This presentation concluded with the proposal of a learning tool for teachers who may find themselves in the Mix and need to explore their learners' cultures. From the recommendations made as I concluded this work, a picture that emerges is that of the possibility of the realisation of Bishop Emeritus Tutu's dream of a rainbow nation and the operationalisation of our country's motto – unity in diversity. My hope in all this work is that it may fan the flames of our hope, that this, to be the land of possibilities, especially in the opening up of science education for those formerly marginalised. The responsibility for the opening up of spaces for these possibilities, as established in this focused ethnography, can no longer be made a state responsibility. The localised nature of our diversity as a people, the porous nature of our rich cultures and rapid urbanisation, places the responsibility for integration in our classrooms. I envisage that the urban science teacher would realise this responsibility and with empathy embrace UBYC in desegregated life sciences classrooms for the sake of social justice and equity.

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APPENDICES

APPENDIX 1: LIFE SCIENCES TEACHERS' LETTER OF CONSENT

Kapofu L.K.

235 Main Rd.

Queensburgh

Durban

4093

17 January 2014

Dear Colleague

I am currently enrolled with the University of KwaZulu-Natal for a PhD in Education. This work entails a research study and I would like you to be part of this research study. The study aims at enhancing learning through culturally responsive pedagogy. The process of the research study will involve class observation for a prolonged period of time, extensive interviews and discussions with your Grade 11 learners. Your participation is, therefore, of utmost importance to the study and I would appreciate it if you could spare some time to participate in this study. Participation in this study is voluntary and involves no feasible risks or harm. All data collected will be treated in strictest confidence and your identity will be kept anonymous. You may call me (Kapofu L.K) at 0783689303 or 031-4640777 for clarity on any aspect of the study.

Sincerely

KAPOFU LIFEAS KUDAKWASHE

I..... willingly agree to participate in the study, which has been explained to me in writing by Kapofu L.K

PARTICIPANT'S SIGNATURE.....

APPENDIX 2: LEARNERS' LETTER OF CONSENT

Kapofu L.K.

235 Main Rd.

Queensburgh

Durban

4093

17 January, 2014

Dear

Learner.....

I am currently studying with the University of KwaZulu-Natal. This work entails a research study and I would like you to be part of this research study. The study aims at enhancing learning through culturally responsive teaching. Your participation is therefore, of utmost importance to the study and I would appreciate if you could avail yourself to participate in this study. Participation in this study is voluntary and involves no feasible risks or harm or loss of any learning time. All data collected will be treated in strictest confidence and your identity will be kept anonymous. You may call me (Kapofu L.K) at 0734478499 or 031-4640777 for clarity on any aspect of the study.

Sincerely

KAPOFU L.K.

I..... voluntarily accept

to participate in this study, which has been explained to me in writing by Kapofu L.K

.....

PARENT'S/ GUARDIAN'S SIGNATURE

APPENDIX 3: PARENTS' / GUARDIANS' LETTER OF CONSENT

Kapofu L.K.

235 Main Rd.

Queensburgh

Durban

4093

17 January, 2014

Dear Parent / Guardian of.....

I am currently reading for PhD with the University of KwaZulu-Natal. This work entails a research study and I would like your/ward child to be part of this research study. The study aims at enhancing learning through culturally responsive teaching. The process of the research study will involve class observation for a prolonged period of time, extensive interviews and discussions with selected Grade 11 learners. Your child's/ward's participation is, therefore, of utmost importance to the study and I would appreciate if s/he could spare some time to participate in this study. Participation in this study is voluntary and involves no feasible risks or harm or loss of any learning time. All data collected will be treated in strictest confidence and your child's/ward's identity will be kept anonymous. You may call me (Kapofu L.K) at 0734478499 or 031-4640777 for clarity on any aspect of the study.

Sincerely

KAPOFU L.K.

I..... willingly allow

in the study, which has been explained to me in writing by Kapofu L.K

.....

PARENT'S/ GUARDIAN'S SIGNATURE

APPENDIX 4: ETHICAL CLEARANCE



15 February 2012

Mr LK Kapofu 212562463
School of Education
Edgewood Campus

Protocol Reference Number: HSS/0059/013D
Project "In the Mix- negotiating the cultural terrain in transforming classrooms"

Dear Mr Kapofu

Expedited Approval

I wish to inform you that your application has been granted Full Approval through an expedited review process:

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. **PLEASE NOTE:** Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....
Professor Steven Collings (Chair)
/px

cc Supervisor Dr Angela James
cc Academic Leader Dr MN Davids
cc School Administrator Ms Bongekile Bhengu

Professor D Wassenaar (Chair)
Biomedical Research Ethics Committee
Westville Campus, Govan Mbeki Building

Postal Address: Private Bag X54001, Durban, 4000, South Africa

Telephone: +27 (0)31 260 2384 Facsimile: +27 (0)31 260 4609 Email: brec@ukzn.ac.za

Website: <http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx>

Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville

INSPIRING GREATNESS



APPENDIX 5: NOTICE TO SCHOOL GOVERNING BODY

Kapofu L.K.

235 Main Rd.

Queensburgh

Durban

4093

17 January 2014

The SGB CHAIRPERSON

Queensburgh High School

P. Bag Dipdale Rd.

Queensburgh

4093

Dear Sir

RE. Request for permission to conduct research at Queensburgh High School.

I hereby request permission to conduct research in your school. This is in pursuance of my PhD studies at the University of KwaZulu-Natal. The title for this study is, "In the Mix-negotiating the cultural terrain in transforming classrooms". The study seeks to enhance teaching practice through cultural sensitivity. This study will be conducted with one Grade 11, Life sciences educator, with her Grade 11 class.

Data collected will be treated with the strictest of confidence and the name of your school will remain anonymous. I hope to receive your favourable response in this regard.

Yours sincerely

Kapofu L.K. (Student no.212562463)

APPENDIX 6: PERMISSION FROM THE DEPARTMENT OF EDUCATION



education

Department:
Education
PROVINCE OF KWAZULU-NATAL

Enquiries: Sibusiso Alwar

Tel: 033 341 8610

Ref.:2/4/8/401

Mr Lifeas Kudakwashe Kapofu
16 Ethelbert Mews
Ethelbert Road
Malvern
Queensburgh
DURBAN
4001

Dear Mr Kapofu

PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS

Your application to conduct a pilot and research entitled: "**In the Mix - Negotiating the Cultural Terrain in Transforming Classrooms**", in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the intended research and interviews are to be conducted.
6. The period of investigation is limited to the period from 01 June 2013 to 30 June 2015.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Mr. Alwar at the contact numbers below.
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report / dissertation / thesis must be submitted to the research office of the Department. Please address it to The Director-Resources Planning, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to the schools and institutions in the following District/s of the KwaZulu Natal Department of Education:
Umlazi District

Nkosinathi S.P. Sishi, PhD
Head of Department: Education
24 June 2013

KWAZULU-NATAL DEPARTMENT OF EDUCATION

POSTAL: Private Bag X 9137, Pietermaritzburg, 3200, KwaZulu-Natal, Republic of South Africa
PHYSICAL: Office G25, 188 Pietermaritz Street, Pietermaritzburg, 3201. Tel. 033 3418610 Fax : 033 341 8612
EMAIL ADDRESS: sibusiso.alwar@kzndoe.gov.za; CALL CENTRE: 0860 596 363;
WEBSITE: www.kzneducation.gov.za

...dedicated to service and performance
beyond the call of duty

MY LEAST FAVOURITE THINGS ARE:

- 0. ~~weeping~~ outside
- 0. ~~using~~ a pen
- 0. ~~dealing~~ friends
- 0. ~~traced~~ unfaithly
- 0. ~~pretending~~ I'm not there
- 0. ~~having~~ too much homework
- 0. ~~having~~ ~~no~~ ~~homework~~
- 0. ~~nobody~~ want to be around me
- 0. ~~being~~ ~~left~~ ~~by~~ myself
- 0. ~~people~~ staring at me
- 0. ~~having~~ no friend
- 0. ~~to~~ walk in hot weather
- 0. ~~seeing~~ ~~the~~ people ~~the~~ ~~have~~ ~~the~~ ~~me~~
- 0. ~~people~~ ~~having~~ ~~lor~~ ~~of~~ ~~thing~~ ~~for~~ ~~the~~ ~~me~~
- 0. ~~showing~~ off
- 0. ~~telling~~ me
- 0. ~~eating~~ food I don't like
- 0. ~~I~~ take people but they
- 0. ~~don't~~ take me to ~~fun~~
- 0. ~~places~~ ~~for~~ ~~staying~~ ~~up~~
- 0. ~~after~~ ~~time~~ ~~to~~ ~~do~~ ~~homework~~

MY DREAMS ARE TO:

- 0. ~~being~~ ~~rich~~
- 0. ~~being~~ ~~rich~~
- 0. ~~being~~ ~~rich~~
- 0. ~~being~~ ~~rich~~
- 0. A doctor or an engineer
- 0. finished school and get into
- 0. to a good college
- 0. college or university
- 0. Getting a good job
- 0. ~~learn~~ ~~and~~ ~~may~~ ~~be~~ ~~get~~
- 0. ~~having~~ a laboratory being
- 0. ~~not~~ ~~and~~ ~~spect~~ ~~some~~ ~~of~~
- 0. The South African language
- 0. properly looking up for
- 0. my career getting white
- 0. ~~and~~ ~~kid~~ ~~I'm~~ ~~a~~ ~~kid~~
- 0. beautiful home of perfume
- 0. in a nice province and
- 0. travel some places around
- 0. the world and not even
- 0. ~~marry~~ ~~with~~ ~~a~~ ~~strong~~ ~~man~~ ~~after~~
- 0. how big or small the problem

AND I KNOW THAT I CAN ACHIEVE THEM BECAUSE I AM:

- 0. Im ~~so~~ ~~strong~~ strong
- 0. brilliant
- 0. helpful
- 0. brave
- 0. being near
- 0. good
- 0. don't bunk
- 0. do homework depends how
- 0. long it will take
- 0. not getting myself in
- 0. big trouble only in all
- 0. things like class detection
- 0. or not finish work
- 0. ~~sharing~~ ~~with~~ ~~people~~
- 0. ~~forgetting~~ ~~people~~ ~~forgetting~~ ~~people~~
- 0. having a 8 hour sleep
- 0. brushing my teeth twice
- 0. a day
- 0. trying keeping them white
- 0. ~~my~~ ~~teeth~~ ~~and~~ ~~skin~~
- 0. staying away from bad people
- 0. praying it day and night

IF YOU ARE 12 AND OVER YOU MIGHT FIND THE NEXT FEW PAGES HELPFUL

THIS IS HOW I FEEL ABOUT MYSELF:

PHYSICALLY (MYBODY)

- 0. When I sleep I usually
- 0. sweat like in a hot
- 0. weather at night
- 0. Growing ~~my~~ ~~muscle~~
- 0. muscle
- 0. did have pimples which
- 0. look so disgusting
- 0. Like my back and neck
- 0. when I get hurt ~~between~~
- 0. between those two part
- 0. the whole week or two
- 0. I'll be pushing my
- 0. back forward to make
- 0. a cramp sound and
- 0. my neck left to rigging
- 0. back to front to fix it

H. I. L. MENTALLY AND EMOTIONALLY ~~I get~~ ~~up~~

U. I get interest looking weird or nerdy around other people, cause they could laugh at me. And even bullying. Like I wear glasses. It just people were laughing when I put them on. And my hair, I just cut it normal, the the other kids cut their hair in patterns, scrips, and hair designs. Break time most of my friend are playing with older kids or talking around bed areas. They are in other classes so it not easy. It like embarrassing seeing people walk pass me, make me nervous around those who are popular.

EXPLAIN WHAT HAS LED YOU TO BELIEVE THESE THINGS.

- o E.G FRIENDS, SCHOOL ETC
- o ~~I~~ Friends always are on my side.
- o People can tell each other what their parents believe in to bring project or anything important to carry to school.
- o Like friend live in same block are forget to the other get it.
- o And school it is education to learn things.
- o To get a good job.
- o Having nice important item for people.

NOW LOOK AT YOUR LIST AND WHETHER EACH ITEM ACTUALLY DESERVES WORRY AND ARE WITHIN YOUR CONTROL.

WRITE DOWN ALL THE THINGS THAT ARE WORRYING YOU AT THE MOMENT.

NOW WRITE ANOTHER LIST, WITH ITEMS THAT YOU CAN CONTROL DO SOMETHING ABOUT, AND WRITE DOWN A PRACTICAL WAY THAT YOU DEAL WITH/SOLVE THIS WORK

Like the school assignment I should do it on time. Instead of leaving on the night before the next due date.

If I have a problem I would have to tell my family. Inst of leaving and worrying for a long time for nothing.

- o Homework
- o assignment
- o activities
- o late sleeping
- o work that take hours
- o being around bully
- o or ~~soaking~~
- o people which are drunk
- o doing alot of chores
- o while doing homework
- o get alot of homework
- o or a search were done
- o the weekend
- o Only finding out I
- o forgot to do my homework
- o on the last minute

APPENDIX 8: CLASSROOM OBSERVATION GUIDE (SAMPLE)

Teacher: Ms Perkins

Grade: 11

Date: 24 / 04 / 14

Topic: The Gaseous Exchange System

Description of Room Arrangement

Ms Perkins conducts her life sciences classes in a standard laboratory, with fixed long tables and high chairs (bar type). This laboratory (Lab1) is located on the ground floor of a two storey building which is Northlea High School. The lab faces the east and is the last building as one approaches the cricket field. Behind Ms Perkins there are concrete terraces meant for cricket spectators. Windows are on the north and south facing walls. The north facing windows enable one to observe all that goes on the basketball court.

Learners sit in rows on these five tables and the front two rows have eight learners and the middle table has six learners and table four has five learners and the last table has four learners. Today there are thirty-one learners in the classroom, and according to her register, four learners are absent.

Learner distribution was as follows T1- 5 Indian, 2 White 1 Black; T2- 3 Indian, 2White, 3Black; T3- 1White, 5Blacks; T4 and T5 all Black learners.

The teacher's table is at the front and the writing board is behind her. Next to her table on the left is a small fixed book shelf with old biology textbooks, whose pages have browned and some have accumulated chalk dust.

Description of Cultural Aesthetics within Academic Setting

There is no evidence of cultural celebration the walls of the classroom are empty with the exception of two A3 posters on the back wall showing life cycles of Bryophytes. There is a fish tank which is green with pond weed and algae. The work surfaces along the sidewalls have textbooks yet to issue them, and apparatus are stored away in the cupboards.

Evidence of Culturally Relevant Literature

None, standard life sciences textbooks issued and used in class. No other additional referencing materials are used.

Lesson Content

Today's lesson was on the breathing system. The teacher began the lesson by introducing the section of biological systems. The teacher highlighted the various systems and listed them on the board and then proceeded to underline the gaseous exchange system and indicated as the topic of study for the coming lessons.

Learners were asked the components of the human gaseous exchange system. Learners mainly from the two front rows provided responses that the teacher needed and then she proceeded with her exposition. Using an overhead projector and drawn transparencies the teacher did an exposition of the breathing system.

Instances of Culturally Relevant Practices/Strategies

What do we call lungs in IsiZulu? "Amaphaphu" was the chorus from the Black Zulu learners. *(This was interesting for me because it seemed as if IsiZulu was the only African language and by implication all Black learners in this class were IsiZulu speakers)*

Evidence of Interaction with All Cultural Groups

The teacher used a bell jar model of the breathing system. Ms Perkins had a glove in the jar and as she pulled on the plastic at the bottom representing the diaphragm the glove inflated. All learners were amazed and began ululating. Ms Perkins smiled and then performed this manoeuvre showing inhalation and exhalation and calls over one of the Black learners from the third table to redo the practical. The Black learner succeeded and Ms Perkins thanked the learner and continued with her exposition.

Events of Cultural Significance

Learners are supposed to line up along the walls before they enter classrooms at NHS. I was in Lab 1 prior to the bell for lesson change over. After the bell rang learners began to arrive for this life sciences lesson. Indian learners lined up along the wall; White learners stood away from everybody and as Ms Perkins went to let all learners in moved into line. Most of

the Black learners stood in a cluster at the back of the line and were loudly conversing. Teacher attends to the awaiting learners: "why are you'll standing like that, look at these learners in a line waiting for me". Looking at the cluster of Black girls and boys with annoyance she blurted "why are you disrespectful and arrogant; you should learn proper manners. "Now you lot must wait till I call you in and the rest of you, come in".

She allowed all the other learners in and they filled the tables from the front. She proceeded to close the door, but hesitated and then brashly called them in and warned them that if that happened again he would not allow them in.

The class began with a roll call, she called out names and the learners responded "yes, ma'am, or present ma'am". Ms Perkins, called out Lwandle, and one Indian learner said 'he is bunking'. One Black learner from table four queried how he knew how he was absent. Ms Perkins, addressed the Black learner "Don't talk to my learners, like that, he was talking to me, if you have anything to say raise your hand, Now stand up and tell us where is he". Black learner, "No ma'am all I'm asking is how does he know he is bunking...?" Ms Perkins, "now be quiet if you don't have anything better to say. Rumbling in undertones the learner sat down

Ms Perkins stood at the front whilst doing her exposition and as she demonstrated the breathing mechanism, the four learners from table five moved over to table four and three and seemed captivated by the demonstration. After the learner's redoing of the demonstration they retreated to table five and as the exposition proceeded they took out their cell phones and were busy on them showing each other some things. The teacher took no notice of this and kept on with her exposition till the bell rang for end of class.

APPENDIX 9: LIFE SCIENCES TEACHERS' INTERVIEW SCHEDULES

Instrument 2a & 2b: Teacher Interview Schedule

Purpose: To collect demographic data and educator perceptions of urban Black youth culture.

Gender: Male Female

Race: White Indian African Coloured

Highest Qualification.....

Biographical Questions

1. How long have you been a practicing teacher?
2. What Grade 11 subject(s) do you teach?
3. How long have you been teaching this/these subject(s)?
4. How many learners do you teach in Grade 11 Life Science?
5. List the differences that exist amongst your learners. Say describe your learners in terms of:
 1. Gender; race, cultural composition
 2. Interest in work; participation during the lessons
 3. What do you think about how they contribute to the lessons

Section B

Urban Black Learners/Black Urban Youth Culture

- 1a. What do the words (1) Urban or (2) Black, mean to you?
- b. Describe your typical Urban Black Learner, from your experience in a mCs.
- c. When did you develop this meaning of an Urban Black Learner?
- d. How did you come to have this meaning of Urban Black Learner?
- 2a. Do you use Urban Black Youth Culture when teaching the subjects that you teach? YES/NO

b. If YES, describe how you incorporate it in your teaching.

c. Explain why you do/do not incorporate Black Urban Youth Culture in your teaching.

3a. Do you think Urban Black Youth Culture should be included in the Curriculum? YES/NO

b. Explain your response to (5a) above.

4a. What impact do you think Urban Black Youth Culture has on your practice?

b. Briefly explain your response to the above.

Instrument 2c: Teacher Interview schedule

Purpose:

To determine how educators respond to urban Black youth cultural structures in transforming classrooms.

Educator understandings about Culture / Multicultural Education

- 1a. What do you understand by the term Culture?
- b. When did you develop this understanding of culture?
- c. How did you develop this understanding culture?
- 2a. Do you incorporate aspects of culture in your practice? YES/NO
- b. Explain your choice in (2a) above.
- 3a. Have you heard of the term Culturally Relevant Teaching? YES/NO
- b. If yes, what meaning do/would you give to Culturally Relevant Teaching?
- 4a. How do you rate the importance of learner cultural considerations in Life Sciences?
- b. Why the rating above?
5. What do you think will be the effect of considering learners' culture in Life Sciences teaching?
6. What challenge(s) do you feel you will encounter in incorporating learner culture in your teaching?
7. How do you think these challenges can be overcome or avoided?
- 8a. Do you feel adequately prepared to teach multicultural classes? YES/NO
- b. If no, in what aspects do you feel you may need assistance?

Instrument 2d: Teacher Interview schedule**Consider your current teaching situation.**

1. In what ways does your teaching take into consideration your learner's family and cultural backgrounds? Give specific examples.
2. In what ways might you augment your instructions, curriculum or assessment to incorporate more of your learner's families and cultures?
3. What are some ways you can (or do) make your classroom a place where learners feel safe sharing personal experiences?
4. How can (or do) you encourage your learners to respect on another's contribution?
5. How do you define success in your classroom?
6. What are some of the challenges you experience in helping ALL of your learners reach these expectations?
7. Describe something you have tried that led to a "turnaround" or a surprising success for a learner who you were concerned.
8. What are some of the ways you have used (or might use) to learn about your learners interests and experiences?
9. What stereotypes might your learners encounter?
10. To what extent are they alike or different from what is expected in school or the classroom?
11. What are some of the ways you might (or do) make connections to your learner's personal experiences in your classroom?
12. How does this influence your teaching?

APPENDIX 10: EDITOR'S LETTER

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sathsgovender4@gmail.com

Dr Saths Govender

28 DECEMBER 2016

TO WHOM IT MAY CONCERN

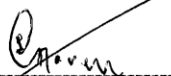
LANGUAGE CLEARANCE CERTIFICATE

This serves to inform that I have read the final version of the thesis titled:

'In the Mix: Exploring Urban Black Youth Culture in Desegregated Life Sciences Classrooms' by L. K. Kapofu, student no. 212562463.

To the best of my knowledge, all the proposed amendments have been effected and the work is free of spelling and grammatical errors. I am of the view that the quality of language used meets generally accepted academic standards.

Yours faithfully



DR S. GOVENDER
B Paed. (Arts), B.A. (Hons), B Ed.
Cambridge Certificate for English Medium Teachers
MPA, D Admin.

APPENDIX 11: TURNITIN REPORT

 Originality Report	Processed on: 09-Jan-2017 10:02 AM CAT ID: 757614449 Word Count: 163351 Submitted: 1	<h2>In the Mix - Exploring Urban Black Youth Culture...</h2> <p>By Lifeas Kudakwashe Kapofu</p>	<table border="1"> <tr> <td colspan="2">Similarity Index</td> </tr> <tr> <td colspan="2" style="text-align: center; font-size: 24pt; font-weight: bold;">3%</td> </tr> <tr> <td colspan="2">Similarity by Source</td> </tr> <tr> <td>Internet Sources:</td> <td style="text-align: right;">3%</td> </tr> <tr> <td>Publications:</td> <td style="text-align: right;">2%</td> </tr> <tr> <td>Student Papers:</td> <td style="text-align: right;">N/A</td> </tr> </table>	Similarity Index		3%		Similarity by Source		Internet Sources:	3%	Publications:	2%	Student Papers:	N/A
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<p>i In the Mix: Exploring Urban Black Youth Culture in Desegregated Life Sciences Classrooms By Lifeas Kudakwashe Kapofu Student number: 212562463</p> <div style="border: 1px dashed #ccc; padding: 5px; margin: 10px 0;"> <p>This thesis submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy in the School of Education College of Humanities University of KwaZulu-Natal Supervisor: Dr Angela James Co-Supervisor: Dr 30</p> </div> <p>Michele Stears January 2017 ii ABSTRACT Through an anthropological approach, in the form of a focused-ethnography, this study explored</p> <div style="border: 1px dashed #ccc; padding: 5px; margin: 10px 0;"> <p>urban Black youth culture (UBYC), in the 155</p> </div> <p>life sciences classrooms of a desegregated former model C school. In the exploration of UBYC the study was guided by the four research questions whose address helped explain the context in which UBYC was created by UBY; the nature of this created culture and lastly; how and why it influenced the teaching and learning of life sciences. This study was trellised on a conflated conceptual and theoretical framework which informed the nature of the research questions, informing, research design and methodology. Such a conflated framework included: Schein's (2004), organisational culture model for cultural analysis; Ryan and Deci (2000), Self-Determination Theory of Motivation; Bourdieu's (1991), Social Imagery and Foucault's (1997), notions of power. Using multiple methods, qualitative data was collected over a six month period. Collected qualitative data was inductively analysed using the NVivo software. Analysed data was interpreted against the theoretical and conceptual frames and a report was compiled. Key findings of this study included the identification of the culpability of the context as structured by players in the life sciences classrooms in the creation of UBYC. Such contextual shortcomings included: classrooms in which culturally responsive pedagogy was not operationalised, classrooms context which were falling short in addressing learners' needs for autonomy, competency and connectedness, and lastly, operationalisation of power in ways that escalated classroom conflicts. Schein's (2004) model was used to decipher life sciences teachers' assumptions. Through knowledge of the teachers' assumptions and observation of their classroom practices, the context in which UBYC was created was established. It was from this understanding that UBY assumptions were deciphered. The deciphering of UBY cultural assumptions provided for the interrogation of how UBYC was influencing, and why it was influencing the teaching and learning of life sciences. It was found that UBYC enabled UBY to trivialise life sciences as a discipline, speak disparagingly about their teachers, disrupt classroom proceedings, sometimes openly defy or aggressively engage with their life sciences teachers. UBYC enabled UBY to perform such enactments as it allowed them to feel superior, powerful, connected and competent.</p> <div style="border: 1px dashed #ccc; padding: 5px; margin: 10px 0;"> <p>It is envisaged that findings of this study 68</p> </div> <p>would provide a lens for viewing contemporary classrooms. This perception is critical in deciphering and explaining phenomena that may be perceived as indiscipline and behavioural challenges. This study iii culminated with the development of a model for cultural studies in classroom settings. It was my view</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; width: 30px;">1</td> <td style="padding: 2px;">< 1% match (Internet from 08-Apr-2009) http://etd.gsu.edu</td> <td style="text-align: right;">✖</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="padding: 2px;">< 1% match (Internet from 29-Mar-2012) http://www.nwu.ac.za</td> <td style="text-align: right;">✖</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="padding: 2px;">< 1% match (Internet from 13-May-2011) http://cogito.ucdc.ro</td> <td style="text-align: right;">✖</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="padding: 2px;">< 1% match (Internet from 20-Mar-2010) http://people.exeter.ac.uk</td> <td style="text-align: right;">✖</td> </tr> <tr> <td style="text-align: center;">5</td> <td style="padding: 2px;">< 1% match (Internet from 14-Dec-2016) http://documents.mx</td> <td style="text-align: right;">✖</td> </tr> <tr> <td style="text-align: center;">6</td> <td style="padding: 2px;">< 1% match (publications) Edgar H. 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