



**AN EXPLORATION OF HOW CURRICULUM
CHANGES AFFECT THE EMOTIONS OF
GRADE 11 LIFE SCIENCES TEACHERS**

By

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A dissertation submitted in fulfilment for the requirements for the degree of

Masters in Education

in Teacher Education and Professional Development

**COLLEGE OF HUMANITIES
UNIVERSITY OF KWAZULU-NATAL
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DECLARATION

Submitted in fulfilment of the requirements for the degree of Masters in Education, in the Graduate Programme in the College of Humanities, University of KwaZulu-Natal, Pietermaritzburg, South Africa.

I, Thembalihle Cele, student number 932405163, declare that

1. The research reported in this thesis, except where otherwise indicated, and is my original research.
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.....
Student Signature

.....
Date

Dr. Jacqueline Naidoo
Name of Supervisor Signature

.....
Date

DEDICATIONS

I dedicate this thesis to my late mother, Elizabeth Mbanjwa, and my late brother, Patrick, Dumsani Mbanjwa who always supported me and instilled in me the passion for education.

My brother's encouragement made me believe in myself.

This thesis is dedicated to you.

ACKNOWLEDGEMENT

I would like to give glory to God Almighty for leading me through this dissertation especially during the times when I thought of giving up and when I tended to lose hope.

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I would also like to extend my genuine appreciation to the Grade 11 Life Sciences teachers of Pholela Circuit who participated in this study.

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PREFACE

The research project described in this dissertation was carried out with six Life Sciences teachers teaching Grade 11 from six different schools. These schools fall under the Pholela Circuit in the Harry Gwala District of KwaZulu-Natal. The project commenced in May 2014 and concluded in January 2017, under the supervision of Dr J. Naidoo of the Pietermaritzburg campus of the University of KwaZulu-Natal.

This study represents the original work completed by the author and has not been submitted in any form for any diploma or degree to any other tertiary institution. Where the author has made use of the work of other authors, this has been duly acknowledged in the text.

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As the candidate's supervisor I agree/do not agree to the submission of this dissertation.

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ABSTRACT

With the inception of democratic governance in South Africa in 1994, significant changes had to be implemented, in order to align the government with the Constitution of the country. This included the need to effect widespread changes in education, not only in 1994, but on an ongoing basis, so as to rectify the imbalances of the past and to continue to make improvements. There have been multiple changes to the Grade 11 Life Sciences curriculum which have presented teachers with one challenge after the next as they grapple to come to terms with each change. Initially Outcomes Based Education (OBE) was introduced, then came Curriculum 2005 (C2005), followed by the national Curriculum Statements (NCS) and finally the Curriculum and Policy Statements (CAPS). As a Life Science teacher, the lack of stability in the subject was frustrating. Hence, the purpose of this study is to explore what emotions Grade 11 Life Sciences teachers have experienced as regards the curricular changes.

Furthermore, the study aims to discover how teachers have coped with and responded to these curricular changes. A further goal of the research is to contribute to the field of research regarding Life Sciences teachers' emotional experiences concerning curricular changes; and also to examine the strategies that teachers use in response to curricular changes.

The focus of the research is on the teachers who were teaching Life Sciences at Grade 11 level in 2015. This study is underpinned by the conceptual framework of the emotional geographies, developed by Hargreaves (2001), and of the genealogy of emotions, developed by Zembylas (2003b).

The research is conducted within the interpretive paradigm. The data collected is sourced from the Life Sciences teachers under the Pholela Circuit in Bulwer, located in the Harry Gwala District of KwaZulu-Natal. The methods of collection include questionnaires and individual interviews with selected teachers. The qualitative data collected is analysed using thematic analysis.

The findings indicate that the Life Sciences teachers experience mixed emotions, ranging from positive to negative feelings with regards to curricular changes. A range of feelings of excitement regarding the nature and need for changes is noted, but the participants also indicated their frustration and concern regarding the manner in which the changes were introduced, the expectations of the Department of Education, and the lack of appropriate support and resources in place to effect the changes. In coping and responding to the curricular changes, teachers have developed “bags of tricks” in order to achieve the purpose of teaching, namely to impart sound knowledge. Teachers believe that it is detrimental to teach learners content knowledge with which they themselves are not confident; hence they make every effort to develop themselves in order for teaching and learning to become a successful experience. The findings of this study could assist the curriculum planners as well as Life Science teachers to understand the importance of emotions in the teaching process, and to ensure that when future curricular changes are introduced; emotional support is also provided. At the same time, curricular changes are necessary and teachers need to strive to expand and deepen their subject content knowledge for their own development.

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ABBREVIATIONS

C2005 - Curriculum 2005

CAPS - Curriculum and Policy Statements

DBE - Department of Basic Education

DoE - Department of Education

FET - Further Education and Training

GET - General Education and Training

LO - Learning Outcomes

NCS - National Curriculum Statements

OBE - Outcomes Based Education

RNCS - Revised National Curriculum Statements

CHAPTER ONE

INTRODUCTION

1.1. Introduction

This introductory chapter begins by outlining the purpose of the study, and then describes the rationale and the background of the study. Next, the research questions and the methodological approaches used are described. The chapter concludes with a brief overview of the structure of the thesis and the contents of each chapter.

1.2 Purpose of the study

‘To teach is to be vulnerable ..., to be vulnerable is to be capable of being hurt (Bullough, 2005, p. 23).’ Bullough suggests that emotions and teaching are closely linked; teaching opens opportunities for a teacher to be hurt. The purpose of this study is to explore the emotional experiences of teachers when curricular changes are introduced. In particular, the study examines the experiences of Grade 11 Life Sciences teachers. Furthermore, it explores how teachers cope and respond to curricular changes. Teachers find themselves engaging various strategies to ensure that the introduced curricular changes are well received by learners, and that the learners’ performance is not negatively affected. Teaching is a moral act (Hargreaves, 2001) since teachers are duty-bound to ensure the effective and efficient transfer of knowledge to learners. If the teachers’ purpose of teaching is not met due to the challenges arising from on-going curricular changes, this amounts to a moral failing and it is thus imperative to discover the ways in which teachers cope with and respond to those changes. Teachers have encountered pleasant and unpleasant emotional experiences in their pursuit of teaching during periods of curricular changes; and these experiences shape not only how teachers perform, but who they are. Considering the fact that we are ‘...socially constructed and reconstructed...’ (Zembylas, 2003b, p. 222), the study will also shed light on how teachers’ emotional experiences affect their identity in the context of a changing environment.

1.3 Background to the study

The personal motivation for engaging in this study was the researcher's own experiences teaching Life Sciences at the Grade 11 level. This was during the period when the newly democratic government in South Africa was trying to bring about transformation in education. Major changes were introduced within the Grade 11 Life Sciences curriculum, with two knowledge areas being added to the curriculum. The two knowledge areas that were introduced were Diversity, change and continuity and Environmental studies. The inclusion of indigenous knowledge systems in all science subjects was another one of the major curricular changes, as was the strengthening of the practical work component (Enduran & Msimanga, 2014). The general pedagogy, content, assessments and methodologies were also reviewed. The syllabus was very long with flexible work schedules and timelines that were not met. Some Life Sciences teachers would teach the Grade 12 syllabus in Grade 11, because they felt that the link between the Grades 11 and 12 syllabi was insufficient. Life Sciences teachers were angered, confused and frustrated; but, in the researcher's experience, these emotional experiences brought them closer as teachers in support of one another. Although Life Sciences teachers generally work in isolation, this anger, confusion and frustration resulted in one positive outcome; it forced teachers out of their boxes and they started "working collaboratively" in clusters (Guskey, 2002; Shulman, 1997). For example, Life Sciences teachers would schedule meetings to discuss the best ways to deal with problematic topics as clusters.

In addition to the experiences and feelings of Life Sciences teachers, a further significant problem was that learners were generally performing poorly in certain themes for example, in the knowledge area of Diversity, change, and continuity (Umalusi & Higher Education South Africa, 2010), which included the challenging subject of evolution in which teachers were not well-versed (Magubane, 2012). The destabilisation of their routines and the large amounts of administrative work required of teachers added to their frustration. Some teachers became resistant to change; they felt discouraged and despondent. In the researcher's cluster most Life Sciences teachers were not confident with the new amendments, especially the assessment standards and methodologies that were to be employed. Teachers had to rely on workshops run by Subject Advisors, and even these were not always beneficial (Guskey & Yoon, 2009).

According to Trigwell (2011), when teachers' environments are full of uncertainties, this impacts negatively on teaching and learning. Furthermore, teachers will not be able to achieve the desired outcomes of the lessons. This may contribute to a high failure rate and to the inability to successfully implement a number of worthwhile programmes. However, the broader debate in literature indicates that studying teacher emotions has been neglected (Zembylas, 2003b; Sutton & Wheatley, 2003; Keltchermans, 2005; De Villiers, 2011). Given that reforms in education are inevitable, and teachers are vehicles to bring about the desired changes (Hoadley & Jansen, cited in Varathaiah, 2010; De Villiers, 2011; Carl, 2005; Symeonides, 2013); and having personally experienced negative emotions when curricular changes were introduced, this situation is what motivated the researcher to explore and understand teachers' emotions upon the introduction of curricular reforms in Grade 11 Life Sciences. Secondly, emotions become visible in one's actions and language (Van Veen, and Slegers, 2006). In the researcher's view, learners sensed up the frustrations experienced by the researcher when teaching those newly introduced areas. As a results-driven person, the researcher became very discouraged when teaching learners new and unfamiliar content, because they would not perform well. As a result, the researcher experimented with a number of strategies to deal with the challenges arising out of the curricular reforms. This motivated the researcher to explore how other Life Sciences teachers cope with and respond to curricular changes.

It is critical therefore to explore phenomena such as teacher emotions which have been overlooked, specifically examining the extent to which teacher emotions are inextricably linked with curriculum reforms. This study is conducted in schools in the Pholela Circuit which falls under the Harry Gwala District of the province of KwaZulu-Natal. These schools are situated in the deep rural areas of the province, where there are a number of significant challenges facing the teaching and learning process, including a lack of teaching materials, under-qualified teachers, overcrowded or multi-graded classrooms and many other contextual factors such as the long distances travelled by learners to reach their schools and the prevalence of poverty in the communities. Regardless of the locality of these schools and their associated difficulties, curricular reforms have to be implemented nationally, and they must be executed in the schools in the Pholela Circuit, just as in any other school in the country.

1.4 Rationale of the study

In South Africa, transformation of basic education is taking place at a rapid rate and there is a continued interest in developing a curriculum that will be characteristic of the Constitution of the country (Noack, 2011). With the inception of the new democratic government, a plethora of reforms has characterised the education system. Reading through the literature, it is evident that emotions and teaching are linked to each other (Hargreaves, 2001; Van Veen & Slegers, 2006; Keltchermans, 2005; Noack, 2011). If emotions influence teaching, it becomes important to explore the links of emotions to teaching. Hence, the purpose of this study is to understand and explore how Life Sciences teachers' emotions are affected by curricular changes in their subject area in Grade 11 and also how these teachers cope with and respond to curricular changes.

The world is not static and change will always be a necessity; however, change brings about uncertainties. Teachers must therefore be emotionally prepared to respond to curricular changes in order to cope with and respond to the accompanying uncertainties. The curricular changes in Life Sciences are necessary and important; and this study does not dispute the need for such changes. The study's focus is to explore the emotional experiences of Grade 11 Life Sciences teachers in regard to the introduced curriculum changes. Curriculum reformers have to be able to acknowledge the "inescapable vulnerabilities" that come with the demands for change (Keltchermans, 2005, p. 1005). As a result, curriculum reformers have to take into account the influence of emotions in the process of implementing curricular changes, and to develop programmes that will attend to teacher vulnerabilities during transition periods.

In contrast to this vulnerability, whilst some teachers may be experiencing negative emotions, others may be finding constructive strategies that can be used to overcome discomforting emotions and transform them into productive behaviours (Zembylas, 2010). Zembylas (2003b) argues that meaning is socially constructed and reconstructed and the failure to implement reforms may, from the interpretive perspective, be due to the failure to construct and reconstruct meaning socially, in understanding of the policy (Spillane, Reiser & Reimer, 2002). In support of this view Hargreaves (2001), in his theory of emotional geographies of teaching, affirms that the distance between the teacher and his/her physical, moral and professional world, determines the success or failure of the

reform initiative which that teacher is expected to implement. De Villiers (2011) argues for the need to understand the complex reason underlying the limited success of well-designed programmes and the reasons why the new methodologies are often not adopted or even attempted.

A further rationale behind this study on the phenomenon of teacher emotions is the identified gap in literature on the concept. Limited research on teacher emotions creates a knowledge gap (Sutton & Wheatley, 2003). Zembylas (2003b) contends that teacher emotions are neglected and their origins are ignored. This study then contributes generally to the limited literature on teacher emotions in relation to curricular changes. It argues for the critical need for curriculum reformers to begin to pay attention to teacher emotions and their effect in the classroom.

A methodological gap is also identified in the studies on teacher emotions (Keltchermans, 2005; Savage, 2004). Studies that have researched the phenomenon of teacher emotion have generally only used semi-structured interviews, life histories and narratives to gather data. This indicates the presence of a gap in the methodology of data collection in studies exploring teacher emotions. It has been mentioned in the literature review that it is not easy to talk about emotions; therefore evocative forms of art need to be employed in collecting data (Furman, Langer & Taylor, 2010). Keltchermans (2005) and Sutton and Wheatley (2003) strengthen this view by arguing that teachers' emotional practices need critical methodological attention from researchers so as to be able to study the multi-componential nature of teacher emotions. The use of a narrative research design is appropriate; it allows participants to bring to the surface subjective data. According to Sutton and Wheatley (2005), using semi-structured interviews to collect data is not highly effective in eliciting deep seated emotional experiences; which participants do not want to talk about. Multiple data collection strategies therefore need to be employed. Hence, the researcher has opted to use poetry and collage to supplement the semi-structured interviews as data collecting methods. According to Furman et al. (2010) and Butler-Kisber (2008), the use of poems and collages are effective tools to generate the said and unsaid emotional experiences.

According to Carl (2005, p. 228), teachers do not wish to be seen “as mere recipients who are to implement the curriculum in the classroom – they expect to be included in the initial

processes of meaningful decision making where their voices are heard.” An implication emanating from this study supporting Carl’s assertion is that teachers feel frustrated when they are not involved in the initial stages of bringing about curriculum reforms. Conducting this study may also contribute to alerting curriculum reformers of the need for teacher involvement in these primary stages of the development of curricular changes.

One of the reasons behind the constant changes in education is to improve the quality of education. This however requires teachers to be intellectually and emotionally equipped to be able to implement these changes. Giving attention to teacher emotions may mean putting processes and programmes in place to support teachers so that teachers may take care of themselves (Sutton & Wheatley, 2003). Likewise, Zembylas (2003b, p. 213) contends that when teachers are affected by curricular changes during the process of a reform initiative “possibilities for teacher transformation, care and self- knowledge may be opened up”. In other words, the curriculum reformers could create opportunities for self-care and teachers themselves could then take responsibility for their own development, adapting and coping with the introduced reforms.

Critical questions

The research questions which the study aims to answer are:

1. What emotions do Grade 11 Life Sciences teachers experience as a result of curricular changes?
2. How do Grade 11 Life Sciences teachers cope with and respond to curricular changes?

1.5 Structure of the thesis

This thesis consists of five chapters. Chapter One is an introductory chapter; outlining the purpose, the rationale and the background of the study, as well as the structure of the thesis. Chapter Two discusses the literature review, interrogating the concept of teacher emotions in relation to curricular changes in Grade 11 Life Sciences. The chapter ends with the conceptual framework that will be used to analyse data. Chapter Three describes the methodology that the study adopts in trying to answer the research questions. The presentation and analysis of data and findings are discussed in Chapter Four. Chapter Five

summarises the conclusion and findings and provides recommendations for further research

CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1. Introduction

The purpose of the study is to explore the emotional experiences of teachers of Grade 11 Life Sciences when curricular changes are introduced. Furthermore, it explores how teachers cope with and respond to these curricular changes. This chapter firstly presents an overview of the curricular changes applied to Grade 11 Life Sciences since of the inauguration of a democratic South African government in 1994. Thereafter follows a review of the literature that displays a link between teacher emotions and curricular changes. This includes literature dealing with educational reforms and teacher emotions as well as with the emotions experienced in the classroom in particular. Emotions in the classroom are impacting on strategies that teachers employ in responding to the curricular changes. The last part of this chapter presents the conceptual framework used to analyse the data collected. In regard to the latter, Hargreaves' (2001) concept of emotional geographies and Zembylas' (2003b) theory of genealogy of emotions are adopted since the researcher viewed these to be of particular use in analysing the data collected. The literature drawn from is both international and national and includes works from Australia, the United States of America, China, Malaysia, the Netherlands and Germany. However, South African literature on emotions is very limited and is underpinned by the field of psychology rather than the field of education.

2.2 Emotions vs. feelings

A vast body of knowledge contends that the terms emotions and feelings are most often used interchangeably; whereas they have distinct variances (Damasio, 1998; Ekkekas, 2012; Petinelli, 2014). According to Damasio (1998, p. 84) emotions can be defined as

...a collection of responses triggered from the parts of the brain to the body and from parts of the brain to other parts of the brain, using both the neural and humoral routes. The end result of the collection of such responses is an emotional state defined by the changes within the body-proper e.g. the viscera, internal milieu, sectors of the brain etc.

This indicates that emotions are a result of physiological thought processes and are important in that they provide a “basic mechanism for making decisions ... [which] affects [the] quality of survival and can help guide the creative process that best characterizes the human mind” (Damasio, 1998; p. 86). As a result, emotions influence behaviour, such as the expression of anger, joy, disgust etc. and this will impact on one’s interaction with the world around one. Neglecting the concept of emotions in research will deprive the learning community of the experience of understanding the role emotions may play in making simple and complex decisions.

As opposed to emotions, feelings originate in the neocortical regions of the brain, and are rational associations with and responses to the emotions (Pettinelli, 2014). Additionally, Damasio (1998, p. 84) defines feelings as the “complex mental state that results from the emotional state, including representations of the changes that have occurred in the body.” Furthermore, Damasio (1998) contends that feelings impact on ongoing thinking, future planning and behaviour. In addition, feelings are also subjective, being influenced by an individual’s character as well as by their past experiences, beliefs and memories. Hence the same feeling may lead to different responses as a result of their experiences. What is critically important about both emotions and feelings is that they both play a powerful role in how we experience and navigate our world which is full of changes, while they are also the driving force behind our behaviours.

2.2 History of curricular changes in South Africa

The transition to democracy in South Africa in 1994 resulted in significant reforms in all the areas which are key drivers of the country’s economy. Education was one of the priorities that underwent rapid changes. In 1997 Curriculum 2005 (C2005) was introduced. C2005 was characterised by Outcomes Based Education (OBE) as one of its central features (Harley & Wedekind, 2004) which aimed at rectifying the curricular imbalances of the past. This method of teaching presented a serious challenge to educators because teachers were accustomed to applying learner centred methods, as demanded by OBE (De Villiers, 2011). Jansen (1997) declares that one of the factors that contributed to the failure of OBE, was the methodologies employed. The methodologies were difficult to apply, and teachers were not sufficiently prepared to use learner-centred methods in the classrooms and to implement C2005 (Harley & Wedekind, 2004; Department of Education, 2003).

Furthermore, Harley and Wedekind (2004) assert that learner centred pedagogy was difficult to administer in overcrowded classrooms. Teachers perceived the OBE approach to education as being confusing, challenging and problematic, and eventually it had to be scrapped (Mouton, Louw & Strydom, 2012). Furthermore, under-resourced schools were struggling to provide teachers with the materials needed to teach specified topics under the OBE system. According to Umalusi (2009b), OBE required competent, well qualified teachers and well-resourced schools for its success. The outcry about OBE led to the introduction of the Revised National Curriculum Statement (RNCS) from Grade R to Grade 9 in 2008 (Mouton et al., 2012). Mouton et al. further assert that “teachers were ill-prepared and did not receive adequate training” (Mouton et al., 2012, p. 1212). Hoadley (2011) asserts that the 2008 matriculants (the product of C2005) performed poorly in national and international standardized tests. Hence in 2009 the new Minister of Education called for a review of C2005. This review led to the strengthening of the National Curriculum Statement (NCS) in order to improve teaching and learning with effect from 2012.

According to the Department of Education (2011a), the curricular changes that were introduced to strengthen the National Curriculum Statement (NCS) for Grades 10 to 12 Life Sciences were the following:

- The lessons stipulated the lesson outcomes to be achieved.
- The curriculum was underpinned by the outcomes based approach
- A learner-centered and activity based approach to education
- The learning outcomes to be achieved were built on the critical and developmental outcomes and on the assessment standards.

The Life Sciences curriculum was divided into four knowledge areas, namely: Tissues, cell and molecular studies; Structures and control of processes in basic life systems; Environmental studies; and Diversity, change and continuity.

In addition to the common curricular changes mentioned above, the changes listed below were specifically introduced to Grade 11 Life Sciences. Some of these changes were topics that were moved from the Grade 10 and Grade 12 curricula, which also underwent review, while others were drawn from the Nated 500 topics. Furthermore, different forms of assessments had to be administered by both teachers and learners. Peer assessment, group assessment, self-assessment and educator assessment had to be applied. The assessment methods ranged from observation, test-based assessments and task-based assessments.

These changes were implemented in Grade 10 in 2006, in Grade 11 in 2007 and in Grade 12 in 2008. Due to a number of complaints by teachers regarding the methodologies, content, contextual factors and the poor performance of the 2008 matriculants, the Minister of the DoE called for a review of the curriculum. According to the Department of Basic Education (2011b), the National Curriculum Statement was amended, with these amendments coming into effect in January 2012. A single all-inclusive National Curriculum and Assessment Policy Statement (CAPS) was developed for each subject to replace the old Subject Statements, Learning Programme Guidelines and Subject Assessment Guidelines for Grades R to 12.

This National Curriculum Statement for Grades R to 12 had its foundations on the previous curriculum OBE, but also improved on it by providing clearer descriptions of what content knowledge should be taught and learnt on a term-by-term basis (DBE, 2011b). In Grade 11, three out of the previous four knowledge strands were included in the NCS. The content knowledge defined in Life at molecular, cellular and tissue level covered in Grade 10 was henceforth to be employed to understand Life processes in plants and animals in Grade 11.

New topics that were introduced in Grade 11 included: Cytology; History of life; Biodiversity and classification; Biospheres to ecosystems; Fossil formation and methods of dating; Circulatory system; Anatomy of dicotyledonous plants; Plants and animal tissues; and Organic and inorganic compounds. Some topics linked back to Grade 7 work, for example Molecules for life. It is likely that learners would have forgotten much of what they had learnt. Human impact is a topic studied in Grade 11, but some of the work linked to this is formally assessed in Grade 12.

The NCS-CAPS stipulated the topics to teach and specified the concepts to be learnt for each term. It also indicated the concepts to be assessed and put guiding principles in place for setting assessment tasks and for when these concepts were to be assessed. Questions of varied levels of difficulty were to be set, the percentage weighting for each concept was to be acknowledged and different types of assessment tasks, such as projects and practical work were to be used, while the moderation of tasks was to be conducted both internally and externally. Table 1 below highlights the weighting of the knowledge areas for assessments tasks in Grades 10, 11 and 12 Life Sciences.

Table 1: Weighting of knowledge areas for the assessment of content in Grades 10, 11 and 12

Knowledge areas	Knowing science	Understanding science	Applying scientific knowledge	Evaluating, analyzing and synthesizing scientific knowledge
%	40%	25%	20%	15%
Examples of useful verbs	<ul style="list-style-type: none"> •State •Name •Label •List •Define •Describe and others 	<ul style="list-style-type: none"> •Explain •Compare •Rearrange •Give an example of •Illustrate •Calculate •Make a generalisation and others 	<ul style="list-style-type: none"> •Predict •Apply •Use knowledge •Demonstrate •Solve •Implement •Judge and others 	<ul style="list-style-type: none"> •Select •Differentiate •Analyse •Infer •Suggest a reason •Discuss •Categorise and others

Note: Retrieved from Department of Basic Education (2011a).

Teachers are expected to weight their assessment tasks in accordance with the above cognitive demands. When moderating assessment tasks, the Heads of Department (HODs) have to ensure that they are aligned to the above weighting. The programme of assessment indicates how many tasks should be completed in a term and how marks should be allocated. Informal daily assessment tasks could be marked by either the Life Sciences teachers or by learners themselves, but the formal tasks must be marked by the teacher because they are used for progression and certification. However, in the Nated 500 and the NCS, no guidelines were provided for how the tasks were to be marked, especially the projects, assignments and the practical work.

Common papers for Grade 11 Life Sciences that were written at the end of each quarter for all schools were introduced. Generally, learners from former disadvantaged schools were

not performing well in these assessments (De Villiers, 2011). These changes impacted negatively on most teachers especially experienced educators who were ill prepared to implement the learner-centred methodologies of teaching (Hoadley, 2011). Darling-Hammond, Chung-Wei, Andree, Richardson, and Orphanos (2009) contend that when teachers are faced with challenges in their practice due to curricular changes, they engage in mutual consultations and on-going support, which are necessary for successful implementation of the reforms. They refer to this as professional learning knowledge in practice. Assessment tasks were set in the Life Sciences clusters for the purpose of standardization. Clusters were groups of teachers teaching the same subjects, who will meet and support each other regarding the content, assessment and methodologies. Teachers were now forced to function differently and their work was moderated continuously. As noted above, they were grouped into clusters, where they helped fellow-teachers on different topics. It was hoped that these cluster meetings would ease the widespread feelings of confusion which are a recognized part of the experience of curriculum changes (Carl, 2005). Zembylas (2010) argues that when people are experiencing the same kind of emotion, they might be drawn closer to one another for support, for example, people can be united by hatred of a certain phenomenon.

2.3 Educational reforms and teacher emotions

The dawn of democracy in South Africa was accompanied by the need for educational reforms which aimed at redressing the imbalances of the past. Teachers had to be the vehicle for transformation in bringing about the desired changes (Carl, 2005). The literature that was reviewed is based on studies undertaken in Australia, the United States of America, Hong Kong, the Netherlands, Germany and Malaysia, as well as in South Africa.

According to De Villiers (2011) in South Africa, the educational changes were not accepted nor embraced; teachers were frustrated, helpless and angry. Furthermore their routines were destabilized and they were required to do a large amount of paperwork (De Villiers, 2011). Teachers' programmes had to be followed in accordance with guidelines set out by the curriculum document for assessment, activities specified and the teaching strategies outlined to achieve set objectives (DoE, 2003). The introduction of new topics such as evolution, and the themes of Environmental studies and of Diversity, change and

continuity demanded that teachers learn thoroughly before they go and teach. Most teachers were not confident with the new amendments, especially the assessment standards and methodologies that had to be employed. Teachers had to rely on workshops run by subject advisors, which did not always address the pressures that accompany curricular changes. Teacher emotions influence the teacher him/herself and his/her students' cognition, and behaviours. (Sutton & Wheatley, 2003).

Why do reforms often bring about challenges and negative emotions? According to Van Veen and Slegers (2006), firstly, these changes come into conflict with the teachers' daily practices, progress and their orientations. Secondly, they argue that the amount of time and energy that new changes demand from teachers, and also the resulting impact are too great for them to cope with. They further maintain that some teachers resist change due to their beliefs, their own interpretation of the significance or relevance of the changes being made and the specific appraisal of the situation. Zembylas (2010) agrees with Van Veen and Slegers (2006) that changes bring about discomfort and emotional challenges in trying to adapt to uncertainties. At the same time, some teachers are able to explore ways to move beyond negative emotions, and to develop productive behaviours by finding constructive strategies to cope in the face of changes (Zembylas, 2010). In other words, change may not be frustrating to all teachers and it is useful to explore what causes teachers to respond differently to change.

A review of the literature reveals that in countries such as China, the Netherlands, Germany and the United States of America, research has revealed the interconnectedness between teacher emotions and curriculum change. Findings from a majority of these studies have shown how teacher emotions and identity are affected when curriculum reforms are introduced. In a study carried out by Lee and Yin (2006), a Chinese perspective on teachers' emotional experiences linked to national curriculum reform was studied. Furthermore, the study examined the factors that shaped how teachers responded towards the reform. This national reform was characterised by the introduction of different resources to be used during teaching and learning, the introduction of new structures at school level to facilitate implementation, as well as the training of teachers (Lee & Yin, 2006). The findings showed that curricular reforms bring about diverse emotions which elicit different behaviours from teachers. Furthermore, the study revealed that interactions between teachers, parents, reformers and students are critical for a successful reform

process. This led Lee and Yin (2006) to claim that Hargreaves' emotional geographies (which are discussed below) do not work in isolation but show interdependence. They suggest that in order for teachers to align themselves with the policies (Hargreaves' political geography), they need to review their work schedules and follow the specified content (Hargreaves' moral geography), and ensure that there is increased communication with all the stakeholders (Hargreaves' physical geography).

Becker, Keller, Goetz, Frenzel and Taxer (2015) conducted an investigation to explore the link between classroom conditions, teachers' appraisals and teacher emotions and specifically to examine the role of teachers' appraisal in the relationship between classroom conditions and teachers' emotions. Their findings reveal that if the interactions between students and teachers are positive and pleasing, the emotions may be used as a resource the teacher can draw from and benefit from. Student motivation is also influenced by the characteristics of the teacher or the class (Becker et al., 2015). This implies that if the teacher's emotional experiences are positive, then learning and teaching becomes successful. Furthermore, positive emotional experiences will influence positive emotional responses (Becker et al., 2015). In addition, a study conducted by Van Veen and Slegers (2006), aimed to understand how teacher's identity can be affected in the context of curricular changes. The emotional experiences of the reform of a Dutch secondary school teacher was analysed to explore how these emotional encounters of enthusiasm for the reform, anxiety, anger, guilt and shame affected the teacher's work in the school. Their findings indicate that teachers are enthused about reforms that improve their pedagogy and content knowledge; reforms which make them better teachers and develops them professionally (Van Veen and Slegers, 2006). However, feelings of anxiety, anger and guilt are experienced if teachers are overwhelmed with the work, restricting work schedules and a lack of collegial, management and departmental support. According to Steinberg (2013) one of the areas that raise strong emotions among teachers is assessment. She further contends that teachers experience emotions ranging from panic, guilt, disappointment, self-doubt and anxiety when learners are being assessed. These emotions are attributed to the departmental demands which undermine and alienate teachers. However, when learners perform well in their assessments, positive emotions motivate teachers to continue performing well. This study indicates that emotions are an intricate and an integral part of teaching, hence more attention must be given to the phenomenon of

emotion in education. Furthermore, this study shows that curricular reforms affect how teachers perceive their personal and professional identity and self-worth.

A South African study conducted by Naidoo (2014), examining HIV and AIDS education, focussed on how the subjectivities and emotionality of the teachers are linked to teaching about HIV and AIDS. The country has been hard hit by the pandemic and teachers share different emotional experiences themselves; if not infected they are affected (Naidoo, 2014). Findings reveal that teachers bring diverse experiences in relation to HIV and AIDS; and as a result of these wide-ranging experiences, teachers' personal and professional lives are influenced. As a consequence, teachers position themselves at various angles to their students when teaching about HIV and AIDS education. However, Naidoo (2014) suggests that these varied subjectivities do not stop teachers from creating platforms in the classrooms to share knowledge, increase knowledge about the pandemic and inculcate values in the classroom to manage HIV and AIDS. One of the major findings concerning teacher emotions made by Naidoo (2014, p. 228) is that "emotions influence their practice when teaching about sensitive issues related to HIV and AIDS." She further postulates that it is difficult to hide these emotions; they simply emerge in the classroom. Although the case of HIV and AIDS may be a topic particularly prone to emotional responses, Naidoo's study affirms what Hargreaves (2001) and Zembylas (2003b) contend: that teaching is indeed an emotional practice. This suggests that teaching and emotions are linked. Teachers may find joy when they are able to teach their students but may experience feelings of sadness when they deal with sensitive topics. However, teachers need to seek ways to ensure that teaching is prioritised regardless of their emotional experiences.

Among a growing number of studies in South Africa that explored emotion, Naidoo (2012) has conducted a study to understand the relationship between teacher identity and pedagogic practice against the background of the curricular reform. Zembylas (2003b, 2010) maintains that identity is constructed by experiences and social interactions. Naidoo (2012) shows that emotions and identity are interwoven. Teacher emotions may influence how a teacher perceives him/herself. It can therefore be concluded that how teachers respond to curricular changes is dependent on their context and identity which determines the degree to which they accept understand the reform. This in turn impacts on how proactive or resistant teachers choose to be due to their own grasp of the changes (Naidoo,

2012; Keltcherman, 2005). According to Naidoo (2012) her findings show that in the various research contexts where she undertook her study, these different settings influence how teachers respond to curricular changes. However, despite the contextual factors, she concludes that “...every teacher’s practice is the intent that learner emerging from the [Further Education and Training]... band must have access to, and succeed in, lifelong education and training of good quality; demonstrate an ability to think critically...” (DoE, 2011b cited in Naidoo, 2012). This indicates that regardless of how adverse conditions may be during the transition phases, teachers are generally committed to ensuring successful teaching and learning and through enabling them to have a better understanding of any changes, they will work to see that the set standards are met.

2.4. Emotions in the classroom

Teaching, being a moral act, comes with certain emotional responsibilities towards the learners, colleagues, the school, the wider community and the teacher him/herself. When a teacher has not met the expectations of above mentioned stakeholders in the system, he or she feels that they have let these stakeholders down. These emotions impact on teaching and learning in the classroom (Carl, 2005; Keltchermans, 2005, Trigwell. 2011). According to Sutton and Wheatley (2003, p. 338-341), “teachers who are frustrated, are less intrinsically motivated and they may attempt to mask these feelings but students are aware of teachers’ emotions and are influenced by teachers’ expression of negative emotions.” Additionally, Trigwell (2011) states that when the teacher’s focus, memory, thought processes and their problem solving skills are divided, activities to be carried out are affected. This means that teaching and learning is affected when teachers are emotionally unstable. However, he further asserts that it is difficult to prove a clear link between teacher motivation and emotions.

Teaching is also a product of power play where the teacher exerts his/her authority on learners (Zembylas, 2003a). In turn, the departmental authorities also assert their power over teachers, for example when instituting curricular changes. When teachers feel that reforms which they do not like or understand are imposed on them and they have to conform to these new rules, feelings of powerlessness are experienced and this leads to a sense of personal inadequacy (Zembylas, 2003b). In other words, if teachers feel their power and authority are taken away from them, this lowers their confidence and self-

esteem. Hargreaves (2001, p.1060) asserts that "... emotional misunderstanding strikes at the foundations of teaching and learning..., lowering standards and depressing quality." This raises an area for exploration, which the current study is investigating. How can teachers provide and maintain quality service standards as articulated in the CAPS document (DoE, 2011a), if emotional negativity arising from the imposition of the numerous new regulations impacts negatively on teaching and learning? Does this imply that if changes are not simply imposed from the upper structures without prior discussions and on-going support, that teachers will gladly embrace reforms? Darling-Hammond et al. (1994) affirm that teacher consultation, ownership and understanding of reform are necessary mechanisms for successful reform programmes and their execution.

De Villiers (2011) conducted a study on student teachers studying toward teaching Grades 10 to 12 Life Sciences under OBE, who had been learners when OBE was introduced. The aim was to explore their experiences in relation to Life Sciences curricular reforms. It was found that the majority of student teachers had difficulty with the following focus areas: Micro-organisms and their diseases; Population studies; and Diversity, change and continuity. This indicated that teachers were unprepared to teach the new Life Sciences curriculum. Their subject content knowledge was questionable and they were not confident (De Villiers, 2011; Umalusi & Education in South Africa, 2010). However, in this study, interviews were used as a data collection instrument, which may not be effective when researching emotions. Employing interviews in conjunction with other tools of artistic expression could have led to great effectiveness in exploring emotions (Furman et al., 2010; Leavy, 2009)

The present study contributes to knowledge on teacher emotions and curriculum reforms to understand how a teacher with negative emotions can be a barrier in the classroom which may result in the development of programmes addressing issues of teacher emotions and identity. De Villiers (2011) claims that such investigations may help researchers to gain clarity on the question of the unexpected limited success levels of programmes with high potential and the non-implementation of new methodologies.

A gap has been identified in researching teacher emotions (Sutton & Wheatley, 2003). Furthermore, Zembylas, (2003b) maintains that emotions are neglected and their origins are ignored. Education reformers will have to start paying attention to teacher emotions

and its effect in the classroom in order for their reforms to be productively implemented. Noack (2011, p. 44) maintains that “teachers’ actions, verbal expressions, and behaviours act like a mirror to reflect teachers’ beliefs.” These beliefs impact on their ability to understand reforms and make positive decisions to implement transformation with success. In other words, this means that the success or failure of reform initiatives depends on how the reform is interpreted. In support of this view, it is stated that teachers are enthusiastic to undergo changes and accept the need for self- improvement if it is to the benefit of their students (Guskey, 2002; Zembylas, 2003b). This highlights that the teacher’s perception, which is a factor linked to his/her emotions, is significant to the successful implementation of educational reforms.

When there are educational changes, it is evident that classrooms become fields of frustrations, uncertainties and discomfort. The empirical studies cited above share common features with my study in that teacher emotion have been explored, together with their influence on teaching and learning. Furthermore, these studies reveal that teacher emotions cannot be ignored and their influence in the classroom may not be underestimated.

It is noticeable that the literature reviewed has a contextual limitation. Despite the contention that teacher emotions are under-researched, countries such as Australia, the United States of America, China, the Netherlands, Germany and Malaysia have a sizeable amount of literature. However, in South Africa the literature is far more limited and tends to be linked directly to the field of psychology. There is a particular dearth of studies on teacher emotions among educators of Life Sciences, and in the context of curricular changes.

2.5. Theoretical framework

The data analysis procedure of the present study is guided by Hargreaves’ (2001) conceptual frameworks of emotional geographies and by Zembylas’s genealogy of emotions. The researcher draws from Hargreaves’ (2001, p. 1061) conceptual framework of emotional geographies of teaching, which he describes as

the pattern of closeness and or distance of human interactions or relationships that help create or configure and colour the feelings and emotion about ourselves, our world and each other.

This conceptual framework assists the present study in responding to the first research question, which seeks to understand from the teachers' viewpoint how they have emotionally experienced curricular reforms. The genealogy of emotions described by Zembylas (2003b) will assist this study to answer the second research question, which seeks to understand how teachers have coped with and responded to curricular changes.

2.5.1. Emotional geographies

Hargreaves' (2001) conceptual framework of emotional geographies is rooted in social construction which emphasizes forms of distance and closeness in people's interactions or relationships that support or threaten basic emotional bonds and understandings. Hargreaves outlines five emotional geographies of distance namely, moral, professional, physical, socio-cultural and political distance. The researcher adopts all five emotional geographies to analyse the data in the present study.

According to Hargreaves (2001) the moral distance is described as the distance that is maintained when teachers achieve their goals or purpose. In such situations, they experience positive emotions; feeling happy and satisfied with themselves. Furthermore, under such conditions, they would want to try something new and take risks because of their successful experiences, which enhance their confidence (Mukeredzi, 2014).

The professional distance described by Hargreaves (2001) is the distance or closeness between the teacher and the instructional knowledge, expertise and the professional judgements. A teacher perceives him/herself as well-versed in his/her subject. When teachers are questioned about their practices and feel that they are not professionally trusted by parents, learners or other teachers, then negative feelings are experienced. Teachers would then retreat and, among other things, resist curricular changes. However, if the relationship between teachers as colleagues, and between teachers and departmental officials are good, then teachers are willing to involve themselves and to work hard to

implement curricular changes. There are however teachers who, despite professional neglect, manage to pull through for the benefit of the learners.

The physical distance is described as the degree of proximity, intensity, frequency and continuity in interactions, which create certain emotions and reactions. During the implementation of a reform initiative, the relative closeness or distance of people - in terms of their physical distance as it is understood by Hargreaves - may result in varied behaviours and responses to the changes. Hargreaves (2001, p. 1062) further contends that the “emotional geographies of human interactions are not only physical. We can feel distant from the people right next to us, yet close to loved ones who are mile away.” As a result, teachers in the same school, teaching within the same subject, may have different emotional experiences due to the subjective nature of emotions.

“Teachers are socio-culturally distanced from many of their students and their families.” (Hargreaves, 2001, p. 1062). Culture is evolving and consequently the cultures of teachers and the students, as well as parents, differ. In the same vein, Zembylas (2003b) contends that in a given society, there will be cultural structures which predict socially acceptable behaviours. These socio-cultural behaviours and differences result in teachers, parents, and learners not understanding each other. As a consequence, this incomprehension may lead to a biased and stereotyped perception about each other. When parents don’t support their children, teachers make assumptions as to the causes for their inactive role in their children’s school life (Zembylas, 2010; Hargreaves, 2001). This distance that is created between teachers, learners and the parents due to their socio-cultural differences, Hargreaves (2001) refers to as the socio-cultural distance.

“Emotions are bound up with people’s experiences of power and powerlessness” (Hargreaves, 2001, p. 1072). This may mean that when teachers are given an opportunity to be part of decision making in matters regarding curricular changes, their emotions will be affected in different ways. Zembylas (2003b) conceptualises emotions as a discourse, and defines emotions not only as personal, psychological or social experiences but also as political experiences. This implies that how one’s workplace is managed, controlled and directed will influence how one responds to any reforms introduced. Hargreaves (2001) further postulates that when teachers claim that their powers have been reduced, they become anxious and fearful. However, if their position has been given more power,

feelings of happiness are experienced. In schools when teachers are led by principals who are not supportive and who are authoritarian, teachers experience feelings of powerlessness. Keltchermans (2005) affirms that teacher emotions cannot be separated from the issues of power and politics because teacher emotions direct the teacher's capacity to achieve what they feel is good teaching, regardless of what is prescribed by policy.

This view helps to explain how teachers feel when curricular changes are effected and how emotions are constructed when teachers are interacting with their environment (their world) which is characterised by reforms. It also helps in analysing teachers' responses to change.

2.5.2. The genealogy of emotions

Genealogies of teachers' emotions describe events, objects, and persons and the relationships among them... and the ways in which these emotions are experienced in relation to the teacher-self (individual reality), the others (social interactions) and the school culture in general (socio-political context) (Zembylas, 2003b, p. 83).

Zembylas (2003a; 2003b) contends that emotions result from the interactions between teachers and their environment. If teachers achieve their goals, and they get a positive response in their engagement with learners, parents and other colleagues; they then become encouraged and experience positive emotions.

According to Zembylas' conceptual framework (2003b), the individual reality describes how teachers experience and express emotions, the social interactions describe how teachers engage with their emotions in their social interaction with others, while the socio-political context shows how issues of power and culture influence the relationship between teachers, learners and their school environment. The socio-political context describes how the social and cultural influences shape teachers' emotions, and also influences how teachers respond to and cope with curricular changes. The socio-political context may also encompass the school rules, policies and the norms of the school (Naidoo, 2014). The three levels of this framework are used in this study to examine the influence of teacher emotions on how teachers adapt and respond to curricular changes in their teaching.

Furthermore, Zembylas' framework of the genealogy of emotions outlines how "teachers' emotions can become sites of resistance and self-transformation" (2003b, p. 213). This implies that teachers are prompted to display certain appropriate and inappropriate behaviours – the latter can be seen as resisting implementing curricular reforms. In some instances, teachers respond to curricular reforms as opportunities for empowerment and self-development. In other words, "emotional rules serve to control and regulate the emotional expressions of teachers" (Naidoo, 2014, p. 57). Teachers' behaviours are guided by emotional rules; hence some of the responses will be viewed as inappropriate. In this study, the researcher adopts Zembylas' genealogies of emotions in teaching as a suitable framework to examine, understand and analyse how the individual realities, social interactions and socio-political context influence teachers' responses to curricular changes in Grade 11 Life Sciences teaching. Zembylas genealogies of emotions therefore assist in answering the second research question of the study.

2.6. Conclusion

This chapter described the history of curricular change in South Africa and outlined teacher emotions in relation to these reforms. Furthermore, the chapter explored international and (more limited) South African literature on teachers' emotional experiences, their response to curricular changes and the influence their emotional experiences have on their teaching. Factors which may bring about positive emotional experiences were discussed, for example, teachers being active participants in the reform initiatives. Factors that make teachers resist change, were also discussed. The second part of the chapter presented the conceptual and theoretical frameworks that will be used as a tool to analyse the data in the present study. Hargreaves' theory of emotional geographies and Zembylas' theory of genealogy of emotions are outlined in this regard. The chapter highlighted that it is therefore crucial that curriculum reformers take into cognisance that change affects teachers' emotions and that emotions play a central role in their teaching practice. As stated, changes are inevitable and teachers will have to find positive self-care strategies to help themselves to adapt positively to educational reform. The following chapter describes the research design and methodology of this study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

The aim of this study is to explore the emotional experiences of Grade 11 Life Sciences teachers as a result of curricular changes. In addition, this study aims to examine how teachers cope with and respond to curricular changes. Chapter Three discusses the research design and methodology employed in this study. The chapter begins with a discussion of the interpretive paradigm and narrative inquiry. It then outlines the tools and strategies used to collect data and the sampling techniques. Next it documents the methods employed to analyse data collected in the study. To conclude, the ethical considerations, trustworthiness and dependability issues as well as the limitations of the study are discussed. The research design and methodology is geared to answer the study's research question guiding this study, namely:

1. What emotions do grade 11 Life Sciences teachers experience as a result of curricular reforms?
2. How do grade 11 Life Sciences teachers cope with and respond to curricular changes?

3.2. Research paradigm

This study is located within the interpretive paradigm. The interpretive paradigm allows the researcher "to understand the subjective world of the human experience" (Cohen, Manion & Morrison, 2011, p. 22). Furthermore, the interpretive paradigm is a tool with which to uncover the fundamental set of beliefs which guide the action of a person or persons (Creswell, 2009). The interpretive paradigm creates an opportunity for the teachers to share their feelings and experiences, as well as to provide interpretations of their actions (Ndemuweda, 2011). The viewpoint of the teachers is crucial. As a qualitative study, this research seeks to provide an in-depth understanding of teachers' emotional experiences when curricular changes are implemented in Grade 11 Life Sciences and how teachers

cope with and respond to these reforms. Qualitative research is described by Cohen et al. (2011, p. 219) as providing

In-depth, intricate and detailed understandings of meanings, actions, non-observable as well as observable phenomena, attitudes, intentions, and behaviours. It also gives voices to participants and probes issues that lie beneath behaviours and actions.

Neuman (2011) defines the qualitative approach as having the potential to employ several research methods to enable a deeper understanding of the phenomenon under investigation. According to Wainwright (1997), qualitative research allows participants to make meaning, interpret the situation and describe the situation from their own viewpoint. Since the present study explores teachers' experiences, a qualitative approach becomes the best fit because it gives teachers a "voice" and an opportunity to share their emotional experiences and allows the research to understand how they cope with and respond to curricular reform.

Baxter and Jack (2008, p. 545) encourage "the close collaboration between the researcher and the participant while enabling the participants to tell their stories." With this closeness extant between the researcher and the participants, the present study is to be able to understand how they make sense of their own worlds.

3.3 Narrative inquiry

This study adopts a narrative inquiry research design (Clandinin & Connelly, 2000). According to Naidoo (2014), a narrative inquiry acknowledges that people construct their realities through telling stories, from their experiences, life and memories. Clandinin (cited in Varathaiah, 2010, p.7) describes narratives as allowing participants to "express, explain, describe and translate their life stories". Since this study explores teacher emotions, it is important that teachers are able to remember, describe and interpret their experiences. Furthermore, these stories inform us about people' behaviours at any point in time, and how they make meaning of their world (Varathaiah, 2010). Narrative inquiry is employed by researchers who conduct studies that seek to understand how their participants make meaning of their worlds. It is used by Nkabinde (2014) in exploring the geographies of

schooling and motherhood narratives of teen mothers in KwaZulu- Natal. Narrative inquiry is also used by Varathaiah (2010) in her study of the relationship between teachers' experiences and evolving teacher identities in post-apartheid South Africa. Naidoo (2014) also employs narrative inquiry as a research design in her study, which navigates teachers' narratives, focussing on the subjectivities and emotionality in HIV and AIDS teaching. The researcher decided to use narrative inquiry in the present study, to explore Grade 11 Life Sciences teachers' emotions and how they cope with and respond to curricular changes. This is because it is the researcher's view that conducting narrative inquiry gives Grade 11 Life Sciences teachers a voice and an opportunity to share their stories about their emotional experiences in relation to curricular changes.

According to Moen (2006) researchers should be mindful of the voice or voices they use to interpret and represent voices of those they study and how to treat the participants as the narrators. Clandinin, Pushor and Orr (2007) share the same sentiment that researchers are in an inquiry relationship with the participants, but that at the same time cannot remove themselves from the relationship. The researcher is thus both an objective and a subjective figure in the research process of a narrative inquiry. Hence, narratives become the best fit for this study as they also align themselves with a constructivist view which acknowledges development of experiences through interaction with one's environment.

3.4. Data generation instruments

Researchers who study emotions must often either depend on behaviours or actions shown as a result of an emotion, as it is difficult to talk about an emotion (Savage, 2004). This was the rationale behind the audio-recording of the semi-structured interviews employed in the present study, in order to extract the nuances in the participants' voices that may reveal their emotions beyond the words that they employ to describe these emotions. Beyond this, emotions may remain silent in the voices and for these reasons evocative forms of art, for example poetry, drawings, artefacts, and collages are also useful. In this study, collages or poems - depending on which of these the participant is more comfortable with – together with semi-structured interviews for all participants, were used as instruments to collect data.

3.3.1. Semi-structured interviews

Brenner (2006) asserts that interviews that involve human beings need to ensure that the participants are protected, anonymity is ensured, and they receive appropriate treatment. This is further discussed below in the section dealing with ethical considerations. The use of semi-structured interviews creates an opportunity to probe and to seek more clarification and elaboration from the participants' responses, as well as to get to know the participants better (Brenner, 2006). Semi-structured interviews are characterised by being less rigid than structured interviews. They allow the researcher to have guiding questions which can be followed up with questions that build up from the responses received, referred to as probing questions (Brenner, 2006). They are also characterised by open-ended questions, which are able to provide in-depth responses, where the interviewee and the researcher are engaged in a process of making meaning. In the present study, the "how" and "why" questions were asked to encourage the participants to give their opinions in their own words. Probing questions were also used, to encourage the participant to continue and to assist the researcher in seeking clarity from the responses.

Cross, Mngadi and Rouhani (2002) used semi-structured interviews as a data collection tool to examine Jamaican teachers' pedagogical and emotional experiences. Likewise, interviews were the primary instrument for data collection in the present study and the researcher followed the recommendations of Rabionet (2011) in preparing a semi-structured interview protocol with carefully phrased core questions and in allowing for flexibility in following up with appropriate probing questions. The semi-structured interviews provide description and detail of, as well as context for the teachers' perspectives on their experiences of curricular changes in Grade 11 Life Sciences. To achieve the most appropriate fundamental interview structure to enable an examination of the meaning underlying the participants' perspectives, the interview protocol used several standard open-ended questions, followed by further probing questions, so that the teachers could reflect on their emotional experiences and how they coped with and responded to those experiences.

Two semi-structured face-to-face interviews were conducted with each participant. The first was concerned with obtaining the participant's biographical information and explaining the purpose of my study to him/her. The second interview was focussed on

gaining in-depth information about teachers' emotions as a result of curricular changes, in order to address the research questions. The interviews were 60 minutes in duration. Telephonic communication was made as a follow-up to allow participants to clarify and to provide more detail on their earlier responses during the face-to-face interviews. The audiotapes of all of these interviews were transcribed and used for later analysis. In addition, each teacher made a collage and or wrote a poem. Six teachers were interviewed, six made collages and two wrote poems; therefore two teachers wrote both the poem and made a collage.

As noted, during the interview an audiotape recorder was used to capture the conversation. The participant's body language or actions were also noted. I was cognisant of how the recorder was used because of its potential to distract the interviewee. Interviews were also characterised by power differentials between the researcher and the participants and it was imperative that they were minimised. The researcher thus created an environment in which a teacher was comfortable in making suggestions where necessary. All the teachers were free to ask for further clarity, if needed. The researcher also gave the participants a report for feedback, to ensure the accuracy of the information.

Conducting an interview might be seen as an easy way to collect data (Furman et al., 2010) but the researcher encountered a number of challenges in regard to the processes and the procedures of conducting the semi-structured interviews employed as a data collection method in this study. As highlighted by Rabionet (2011), the researcher had to be quick to notice whether the interview was taking an undesired direction. Though needing to be mindful of obtaining relevant information, it was also important to listen to the participant's story and to respond appropriately so that the participant's full engagement was not lost in the process.

3.3.2. Collages

“A collage refers to a genre in which found materials that are either natural or man-made are cut up and pasted on some sort of flat surface” (Butler-Kisber, 2008, p. 266). Collages are able to cancel out the linearity in written text and amplify the participants' voices and also increase chances for several and varied realities and understandings. They are a significant tool because they are able to capture the “said and the unsaid” (Butler-Kisber,

2008, p. 268). It is not easy to talk about ones' feelings; therefore, use of the collage as an inquiry helps bring to surface the unconscious emotional experiences.

The use of collages in qualitative research has gained popularity because of its philosophical underpinning. Butler-Kisber (2008) outlines a number of features which characterise the collage as a method of inquiry. Collages have multiple realities, allowing the viewer to produce what is called the "kaleidoscopic representation" of a phenomenon. This is supportive of the postmodernist claim that there is no single truth as long as there is justification of your view (Richardson, 2000). Hence the collage will create a dialogue between the viewer and the artist in which no particular stance or position is necessarily superior to any other. Finley (2001, p. 17) emphasizes the effectiveness of using collages in eliciting emotions, asserting that;

the structures of collage simultaneously emphasizes personal meanings, history, culture, and tradition in such a way as to bring disparate voices of the internal-personal and external-contextual to a common place.

However, collages are fundamentally subjective in nature, representing the individual's experiences and their life histories, even though the viewer may interpret the image the way he/she reads it. Collages encourage reflection, allowing individuals to think, reflect and be creative in reading the representation to create meaning. Butler-Kisber (2008) agrees that collages bring into play different ways of thinking about the representations and reveal aspects in the subconscious mind. Therefore, an advantage of using a collage is that it encourages people to enter into debate or dialogue about issues and also take actions (Khanare, 2009). Khanare (2009) used collages in a study that aimed at developing the school asset base in support of orphaned and vulnerable children. Through the use of collages, teachers were able to think, share ideas, suggest, question and explain to each other the selection of various words, images and pictures, thereby enabling them to come up with ideas for the children's support.

It should be noted that many cultures, for example some African cultures, do not allow people to speak openly about their feelings, especially males. The collage thus opens up opportunities for participants in the present study to express and interact with their emotions. The second research question that asks how teachers felt when curricular

changes were implemented may be efficiently answered if participants are allowed an opportunity to design a collage representing their emotions in this regard.

3.3.3. Poems

Furman, Langer, and Taylor (2010) explore autobiographical poems and narrative reflections as vehicles of inquiry. Poems are described as an artistic means of presenting the participants' lived experiences in a very condensed form (Furman, et al 2010). Furman, et al (2010) further mention that poems are very powerful in presenting in-depth emotional experiences which qualitative researchers seek to explore, while they can also engage silenced voices. The researcher has therefore opted to use poetry in her pursuit of teachers' emotional experiences, because poems will be able to provide her with rich in-depth data.

According to Leavy (2009, p. 74), using poetry will help to "access the subjugated knowledge and the experience of those who are disenfranchised." Furthermore, she asserts that poems are also able to communicate the participants' emotional world with efficiency and effectiveness. Leavy (2009, p. 63) defines poetry as "a research strategy that offers a form for the evocative presentation of data." Similarly, Faulkner, (cited in Leavy, 2009, p. 67) defines poetry as "a method of writing that evokes emotions, promotes human connection and understanding..." Both definitions suggest that poetry evokes emotions. Leavy (2009) further contends that through poetry, people get to connect their own experiences with the lived experiences of the poet. Hence we get to understand each other and our deep seated emotions. Richardson (1997, p. 259) concurs by stating that poetry "connects the audience with something deep within them". It is therefore evident that poetry offers opportunities to represent evocative data. Using poems as one of my instruments to collect data will enhance the dependability of data.

In answering the first research question, which seeks to understand the emotional experiences of teachers, poems or collages were particularly useful in eliciting data. However, when the teachers were making their collages and poems, they were engaged in responding to both questions.

3.4. Sampling

The focus of this study is on Grade 11 Life Sciences teachers and the sample sites that were selected are schools. Purposive sampling was employed in this study. According to Cohen et al, (2011) purposive sampling is usually employed to increase understanding of the groups' or individual's experiences. Creswell (2005) contends that purposive sampling involves selecting participants who understand the phenomenon being studied. Purposive sampling was therefore used to select six Grade 11 Life Sciences teachers. The sample consisted of 5 females and a male teacher. The convenience sampling was used to select the six schools that were easily accessible to the researcher, due to time and financial constraints, as per the advice of other scholars (Cohen et al., 2011). However, Cohen et al. (2011) acknowledge that such sampling may compromise valid data. To increase the credibility of the information gathered, the participants were visited twice and more than one method was employed in collecting data.

3.5. Research context

The study was conducted in the Pholela Circuit which is located in the Sisonke District, now known as the Harry Gwala District. Harry Gwala District is among the deep rural districts in the province of KwaZulu-Natal. Most learners are classed orphans or vulnerable children, living in conditions of poverty. Regardless of the problematic locality of these schools, curricular reforms have to be implemented universally, and Pholela Circuit is no exception. The sample includes six educators from six schools. Normally there is only one Life Sciences teacher in high schools in areas like Pholela Circuit, who teaches Grades 10 – 12; hence the projected visits to six schools. Five of the schools have been consistently performing well in the matriculation examinations, except for the Sea High which has been classified as an underperforming school, which obtain less than 60% in the overall matric results.

3.6. Data analysis

Data analysis was conducted through thematic analysis. According to Grbich (2007, p. 32) thematic analysis is defined as;

idiosyncratic and can involve a focus on repeated words or phrases, case studies or evidence of answers to the research question/s which have been

devised.... Themes may come from previous relevant research which you have reviewed, from myths/evidence within the area being studied or from your gut feelings, as well as from the views of those being observed or interviewed.

In analysing the data, the researcher focussed on the repeated phrases and words and on the themes that emerged. The advantage of thematic analysis is that large chunks of data can be reduced and organised into manageable chunks of data, with brief summaries of these chunks of data indicating emerging themes (Cohen, et al, 2007 Cross et al., 2011).

The process of conducting thematic analysis was undertaken by developing ‘coding’ categories as patterns emerged from the data. While coding significant responses made by participants concerning their emotional experiences and their responses to curricular changes, themes emerged (Cross et al., 2011). These themes helped the researcher to organise, prepare and summarise data in response to the research questions of this study. Using the thematic analysis within the framework of the study appeared most fitting because of its powerful mission to put together common descriptions of the participants’ stories to form a holistic image of their shared experiences.

The analysis procedure was also guided by Zembylas’ theory of genealogy of emotions and Hargreaves’ theory of emotional geographies. The genealogy of emotions, according to Zembylas (2003b), suggests that emotions result from the interactions between the teachers and their environment. If teachers are successful in their work and receive affirmation from the interaction with stakeholders in their profession (learners, parents and other colleagues), this leads to their experiencing positive emotions. This theoretical framework assisted this study in answering the first research question, namely to understand what teachers’ emotional experiences are in regard to the impact of curricular reforms.

As noted above, the researcher has also drawn from Hargreaves’ (2001, p. 1061) theory of emotional geographies of teaching, which encapsulates how the nature of human interactions or relationship – their closeness or distance – result in and shape our feelings concerning ourselves, one another and our world, either supporting or threatening basic emotional bonds and understandings. There are five emotional geographies of distance namely, socio-cultural, moral, professional, political and physical distance, which formed the other theoretical analysing tool in the study. These emotional geographies assisted the

researcher in answering the second research question, namely to seek to understand how teachers have coped with and responded to curricular changes.

Socio-cultural distance depends on the closeness or distance between the social and cultural contexts of teachers, learners and parents (Hargreaves, 2001). What is and what is not socially acceptable is determined largely by culture and this means that teachers, learners and parents may misunderstand or make assumptions about one another due to their socio-cultural distance, impacting on their emotions.

Hargreaves (2001) associates the moral distance to the attainment by teachers of their goals or purpose. This leads to feelings of satisfaction with, and confidence in themselves, as well as other and similar position emotions. They feel the confidence to stretch themselves and take on greater challenges, building on their successful experiences (Mukeredzi, 2014).

Hargreaves (2001) links professional distance with the relationship of closeness or distance between the teacher and his/her expected levels of expertise and instructional knowledge, as well as professional judgements pertaining to that teacher. If the teacher's practices are questioned and if he/she feels a lack of professional respect or trust by parents, learners, or fellow teachers, then negative feelings are experienced by that teacher. The extent to which interactions are close, intense, frequent and continuous determines the physical distance, creating certain emotions and reactions which often intensify during times of change or reform (Hargreaves, 2001).

To analyse the data, the researcher examined the text, collages and poems and then identified key ideas and coded them. During the process of coding, the researcher found herself moving backwards and forwards between codes and raw data to ensure that the code was the most appropriate one to assign to the item of data.

3.7. Trustworthiness and dependability of data

The trustworthiness of data in narrative research is accomplished by making every aspect visible and available to the research audience, including “what decisions have been taken, why certain procedures have been followed and how certain interpretations have been

reached” (Mischler, cited in Varathaiah, 2010, p. 30). In this regard, the researcher has provided detailed clarification of the data collection methods, namely the use of semi structured interviews, poems and collage. Using different strategies will produce multi-dimensional data and therefore increase reliability, a feature of research known as triangulation. According to Cohen, Manion, and Morrison, (2007) triangulation refers to using different kinds of sources that can provide insights about the same phenomenon. Accordingly, the data obtained through the use of one tool employed in the present study was be compared and checked against the information obtained from the other tools. In this manner, the consistency of the information was measured.

The transcribed text was sent to participants for self-checking and to verify the reliability and the trustworthiness of the data (Ndemuweda, 2011). Ensuring the trustworthiness and dependability of a study also requires a great deal of openness and trust between the researcher and the participants. A caring relationship must be fostered to facilitate maximum cooperation in storytelling, retelling and reliving of individual, personal experiences. This was achieved in the present research by visiting the participants more than once, as well as by sharing the interview transcript with the narrator (Clandinin, 2000). The researcher has ensured that the gathered data is kept in a safe place and is readily available for verification. Supervisors also play an active role in the whole process of conducting a study and their engagement further increases the validity and reliability of the data.

3.8. Ethical considerations

Ethics is defined as the act and attitude of being sensitive to the rights of others, and it highlights the importance of getting to the truth; but in that process of getting to the truth, ethical considerations also remind researchers to ensure that respect for human dignity is central to their research processes and outcomes (Cohen et al., 2011).

With regard to the present study, the researcher followed the ethical requirements set out by the University of KwaZulu-Natal. The researcher requested written permission to conduct the research from the Head of the KwaZulu-Natal Department of Education. After permission was granted, the researcher telephonically contacted the principals of schools, followed by the participants to ask for permission to conduct the study and to engage with

the participants. Thereafter dates, times and venues for conducting the interviews were negotiated.

Before the commencement of the interviews, the participants were informed of all their rights, and they were issued with informed consent letters which indicated their agreement to be interviewed. The researcher also explained briefly the purpose and the nature of the study. All participants were informed verbally and in writing of their right to confidentiality and anonymity, their voluntary participation and their right to withdraw at any stage of the study if they wanted to do so. As regards their rights to privacy, the participants were told that pseudonyms would be used in the study in order to ensure their anonymity. In addition, the researcher informed the participants that the data obtained would only be used in the study and not for other purposes. These steps were aimed at promoting openness on the part of the participants. The researcher also asked for permission for audio-recording of the interviews and all the participants willingly consented. Flexibility about the times and venues for the interviews and other interactions were allowed for all the participants since it was not easy to find the appropriate times for appointments, because Further Education and Training (FET) band teachers have very busy schedules. The researcher personally conducted all the interviews to ascertain that all questions, probing and areas which need clarity were attended to. Once the data had been transcribed, summarised and analysed, the participants were given an opportunity to check whether the information was accurately recorded and understood. As asserted by Cohen et al. (2011), the participants have ownership of the data and the results, as well as control over the release of the data.

3.9. Limitations and challenges

There are a number of limitations in the present study, pertaining to the literature referred to, to the methodology and to the position and identity of the researcher herself. The literature is limited in terms of its contextual bias. The bulk of the literature reviewed is from outside the African and South African contexts. In addition, the discussions tend to take a more general psychological angle rather than one based in the specific arena of teaching and learning. There is also a noted methodological limitation, both in the literature relied on for this study and in the methods employed by the present study itself. The use of interviews and narratives are predominant in the literature, whereas more

effective methods to bring to surface deep lying emotions include evocative forms of art such as poems, collages, drawings and artefacts (Furman et al., 2010; Leavy, 2009; Cole, 2011). At the same time, although the present study employed both poetry and collage to collect data, it is acknowledged that these media could present a significant challenge to participants who may have felt alienated by being asked to express themselves via such art forms.

As noted by Cohen et al. (2011), small scale qualitative studies which produce personal and subjective data, cannot be generalised. This means that the findings of present study cannot necessarily be extrapolated to apply to the wider educational milieu, although the researcher proposes that these findings do provide important insights into the emotional challenges which curriculum changes place upon teachers.

Finally, in view of the advice of Ndemuweda (2011), given the researcher's position as an education specialist in special education, it is necessary to acknowledge the potential for certain biases and personal interests in conducting this study. The researcher has therefore attempted to take the role of a practitioner researcher who brackets her own opinions, experiences and knowledge to reduce the risk of bias and to avoid in any way influencing the direction of the conversation beyond ensuring that it remains broadly on topic.

3.10. Conclusion

This chapter focused on the research methodology and design of the study. The choice of the interpretive paradigm and the qualitative, narrative inquiry approach to the study was outlined and explained. The data collection techniques, including semi-structured interviews, collages or poetry and the rationale behind these choices were also discussed. In addition, the sampling procedure for the participants and the schools, as well as the data analysis was clarified. Finally, the study's trustworthiness and dependability and the ethical issues and challenges facing it, as well as the limitations of the research, were elucidated. In the next chapter the data and findings of the study will be presented, analysed and discussed.

CHAPTER 4

PRESENTATION OF FINDINGS

4.1 Introduction

After reflecting on the review of literature about teacher emotions in relation to curricular changes in Chapter Two and on the methodological design of the present study in Chapter Three, the emphasis of the present chapter is on the data produced from engaging with the six participants. In this chapter, the narratives of the six participating teachers are presented. The researcher has constructed the narratives based on the interviews held with the six teachers and written in the form of first and third person narration. The data collected from the collages and the poems was also used in developing the narratives. In constructing the narratives, the interview transcripts, the poems and the collages of all six participants were read and examined repeatedly in order to get a better sense and understanding of the data. Through this process many common issues began to emerge. These general shared issues then became the markers in the creation of the narratives. These markers assisted the researcher in deducing the common themes relating to the teachers' emotional experiences in relation to curricular changes in Grade 11 Life Sciences; as well as the ways in which these teachers have coped with and responded to curricular changes. Thus, this approach of presenting the narratives ultimately provided clarity for the analysis in that the common categories could be identified and discussed.

The first part of this chapter deals with the presentation of data, which aims to show the reader how the themes were derived from the collected data. The second part of this chapter is the analysis of the narratives, the aim of which is to reveal to the reader what this data means in terms of the two research questions that this study seeks to answer.

The narratives begin by briefly describing the biographical information of each participant with a little background of their qualification and the challenges they have experienced in implementing the curricular changes. Pseudonyms have been assigned to the participants to protect their anonymity in the study to allow them to communicate openly. Central to the narratives, is the discussion of how the teachers have experienced curricular changes and how they have responded to such changes. All six participants related issues they had experienced and how they overcame them. The teachers identified what they consider as negative and positive emotional experiences and what has resulted in such feelings.

All the six schools involved in this study are situated in the deep rural areas of the Harry Gwala District of KwaZulu-Natal. The schools are characterised by overcrowded classrooms and learners are not exposed to technological advancements. Therefore, generally, according to the teachers, their learners sometimes fail to understand what is prescribed in the syllabus. As with the participants, the names of the schools are fictitious to protect the anonymity of the schools in this study.

The six teachers participating in the study believe that their learners are from strongly disadvantaged communities. They are generally from poor socio-economic backgrounds, with dysfunctional families, parents who are unemployed and living with extended families. The majority of teachers in this district live some distance away from the schools and are given the name “the commuters”. As a result, they are unable to conduct early morning and late afternoon classes due to the lift clubs which transport them to and from school.

4.2. Pinkie’s narrative: the scholar, the lifelong learner

Pinkie is very passionate about her teaching career. She holds a Bachelor of Science (B.Sc.) degree in Nutrition, majoring in Human Physiology and Anatomy, Zoology and Botany obtained, through full time study, from the University of the Witwatersrand. She has taught at three schools during her career as a teacher and is a Post Level One teacher at the school; teaching Grades 10 to 12 Life Sciences. She also teaches Physical Sciences Grade 11, Natural Sciences Grade 9 and Technology Grade 8. In 2014 she went to the United States of America a teacher excellence programme to attend a course on how to improve teaching methodology in Life Sciences, which she felt was very beneficial as it enhanced her ways of approaching certain concepts. She confirmed that the experience *...has opened my mind into loopholes I have*. She has been able to apply what she learnt in the United States in her teaching and in her classroom.

In 2015 her class groups ranged from 21 to 60 learners in one class; altogether, she had to teach 109 Grades 11 students Life Sciences. Pinkie acknowledged that it is very challenging to teach overcrowded classes because she is unable to give differentiated support to learners experiencing barriers to learning, or to suit learners’ various learning styles. Furthermore, a lack of resources and electricity, poor learner motivation, and

societal barriers between the school and the community due to the latter's failure to prioritise the former, are key challenges experienced by this teacher.

When Pinkie was asked how these challenges might be alleviated, she mentioned that improved teacher-parent relationships and increased parental support from home could assist in this regard. She also highlighted that the learners' support system at home is lacking; the teacher is the often only figure of authority. Pinkie felt that poverty, as well as a lack of knowledge and understanding from parents contributes to maladies of schools. If parents could play a better role in supporting their children, then improvements could be made in all areas of schooling life. Furthermore, she contended that school management teams (SMTs) are structures that can enhance the functionality of schools by supporting the needs of a teacher. She pointed out that she has experienced a number of changes in the Grade 11 Life Sciences curriculum. She was already a teacher when OBE was introduced, which was later reviewed to CAPS.

With regards to her emotional experiences when curricular changes were effected, she enthusiastically claimed: *As a teacher you need to be a scholar and a lifelong learner.* She mentioned that initially when changes were introduced, feelings of frustration did come up due to a number of factors. The topics to be taught in Grades 10, 11, and 12 did not follow on from one another; it remained a source of frustration that the link between the concepts was still not clear. In addition, teachers at ground level were not involved in the initial stages of the change process. There was no verbal communication; it was a situation of "you do it because we say so." She further stated that since curriculum reformers have left their teaching careers, they have lost touch with the realities of what is happening in classrooms. She stated: *Learners change and hence classrooms change.*

However, Pinkie firmly believes that no matter how confusing the change might be, the teacher has to find ways to deal with the frustration for learners to be able to learn. In Pinkie's words:

There was some kind of frustration but I always found ways to deal with it before I got into the classroom. I always found ways to deal with change by reading more books; but that is also frustrating.

Furthermore, she stated that the shortage of resources in the school, in particular the lack of CAPS-aligned information and textbooks were factors that led to some teachers being frustrated. The CAPS methods, activities, types of questioning and assessment were all unclear and teachers were not sure of how to implement the required changes. As a cluster, the teachers held meetings where their stress and frustrations that emanated from the implementation of the new curriculum were to some degree relieved. In the cluster meetings, teachers had an opportunity to identify difficult concepts with which they needed support, as well as to share tips and ideas on how to deal with those areas of concern. They also shared assessment tasks and developed lesson plans together so that their work was standardised.

On suggesting factors that could have resulted in positive emotional experiences when changes are introduced, Pinkie mentioned that a dialogue between curriculum reformers and teachers could be held at the initial stages of the reform initiative, and that teachers should be the developers and drivers of the curriculum reform. The top-down model of cascading information should be reviewed and dynamic workshops should be conducted before the implementation of changes. She also mentioned that teachers who taught Biology are not used to new strategies employed in the new Life Sciences curriculum such as the conduction of experiments, hypothesis testing and other new phenomena and terminology. Pinkie strongly stressed the importance of the DoE organising intense workshops to alleviate the frustration, possibly to be held over the school holidays, which could last for up to two weeks. However, she also firmly believes in self-development, advocating that the teacher should take the initiative to engage in study in order to extend him/her. Teachers have to know and be confident about what they are teaching. Pinkie further stated that the officials who conduct workshops are themselves at times not confident of the content knowledge, which further frustrates teachers. Pinkie asserted that:

It becomes paradoxical that teachers are expected to perform, ensuring that learners master content knowledge, when officials cannot match those standards. At one stage the Physical Science subject advisor had to take care of the Life Sciences teachers when he was not conversant with Life Sciences.

Though curricular reforms brought frustrations, there were also success stories that Pinkie experienced. Under the curricular changes, Paper Three, worth 60 marks and based on

experiments, was introduced. The learners had never been exposed to experimental work experiences. The teacher designed a method which allowed all of the 109 learners to conduct four experiments in an hour and 20 minutes. The learners thus had the opportunity to conduct experiments and Pinkie noted that some learners learn best when they manipulate objects; they are visual learners. In Pinkie's teaching, theory became coupled with practice. This was one of her breakthroughs. She also uses, hands-on techniques, gave learners tasks to research on and instructed them to make presentations on their allocated tasks. She strongly believes that: *If the learner fails, the teacher has failed.*

Pinkie narrated one of her worst experiences in teaching the Grade 11 group. The class specialising in humanities subjects did not want to study Life Sciences. They viewed the subject as abstract, they lacked enthusiasm and they performed poorly in the subject. When she asked how she could assist them with the subject, they were antagonistic in their response.

They hate it, they don't want it, and it's boring, because they will pass the Grade even though they may fail only Life Sciences. [They said to Pinkie that] she must do herself a favour by stopping teaching them. They don't know why they are to study it because they won't be nurses as they don't do Mathematics. It doesn't link with their package; it's irrelevant.

These learners had developed hostility against the subject which has translated into hostility against the teacher. She continued to say: *There's no winning with them.* When Pinkie had to go to their classroom, she felt discouraged and unmotivated to teach them, but she had no choice in the matter since this was part of her workload and obligations. In spite of such negativity, Pinkie continued to seek ways to assist the class to master the difficult concepts.

In this school there are two teachers teaching Life Sciences in Grade 11. The other teacher stated that she is also accepting of the change in the curriculum, coping with it by attempting to find ways to deal with the reforms. In Pinkie's cluster, most teachers generally expressed feelings of frustration about curricular changes because of the frequency with which reforms occur. Pinkie feels that it is critical that the phenomenon of teacher emotions be given attention in education. She contended that if teachers are

negatively affected by the reform initiatives, the implementation will definitely be hindered because it is up to these teachers to implement the changes. Dialogue and a bottom-up approach can be used to bring in teachers into the decision making processes.

Teaching Grade 11 Life Sciences during periods of change was very difficult for Pinkie. To make matters worse, the Harry Gwala District did not have a subject advisor. The teachers would receive information through hearsay, reading documents, and cluster meetings. A subject advisor has subsequently been assigned and since then, meetings are held to introduce changes, and demonstration lessons are conducted to show how these reforms should be implemented. Despite the support that teachers now have from the subject advisor, Pinkie noted that challenges remain that are still areas of concern. Some teachers are embarrassed to admit that they need support in certain areas of the curriculum. She expressed that a shortage of time contributes to teachers not being able to support each other maximally, together with the rigidity of the work schedule as ... *you have to pace yourself and teaching from period 1 to 12 on the day*. As teachers of the cluster, Pinkie said that she and her colleagues meet four times a term for support; she however argued that the number of support sessions should be increased. Pinkie highlighted the need for the schools to have in situ support from other teachers, from the school management team SMT or from phase or subject committees, in order for confusion and uncertainties to be addressed.

The language of teaching and learning (LOLT) is of great concern in the rural communities when learners do not understand the LOLT. To show her dismay, Pinkie said:

I don't teach in IsiZulu and learners learn better in their vernacular. There is therefore a gap between how I teach and how they learn. They would ask why I can't translate the villus, oesophagus etc. It's a barrier to my teaching, [to teach in English to] learners who barely hear English from their environment... I feel like I'm wasting my time.

Pinkie stated that she is sometimes forced to code switch although she is reluctant to do so because the question paper at the end of the year is written in English. Code switching is to use a mix of the vernacular language (IsiZulu) and English when teaching.

4.3. Ntobeko's narrative: the reflective one

Ntobeko started teaching in 2006 as a substitute in two schools until he was permanently employed in his present school. He particularly mentioned the invaluable mentoring that he was given by a retired teacher at the school. He acknowledged the fact that he was while confident with the content knowledge; he lacked the teaching practice and methodologies. He has a B.Sc. in Microbiology with Biochemistry and Genetics as major subjects. He further studied towards a qualification in project management with the hope that he will be employed in the industry. Realising that he was developing a passion for teaching, he then enrolled for a Post Graduate Certificate in Education (PGCE). He said: *I now enjoy teaching Life Sciences though there are certain things that I feel need to be reviewed in the curriculum and the schooling system as a whole.*

Ntobeko has taught Grade 11 for nine years. He is a Post Level One teacher who now is a lead teacher for Life Sciences in the Harry Gwala District. In spite of the challenge of overcrowding in the school, he has devised different strategies to deal with the problem, such as grouping learners into ability groups. He noted however that...*grouping them is not always effective; some might hide within the group.*

He further stated that in the general classes which include learners specializing in humanities subjects, one would find learners who have never passed Life Sciences; it becomes very difficult to teach those learners. He explained that he prepares differentiated lessons before embarking on teaching, because the learners are at different levels and they have varying gaps in their content knowledge.

In Life Sciences class, the use of debates and research methods which allow for maximum participation are encouraged. Learners are able to stand in front of the class and argue in support of or against a certain position or to justify their opinions; and they are performing well, attaining pass rates of between 75% and 80%. Meanwhile, in the general class group, Ntobeko uses drilling methods, as a method of instruction, in order for the learners to pass. He contended that ... *the use of games, puzzles, play methods and debates encourage learning... Whilst playing they are learning the terminology.* He has also introduced an extra hour of teaching in the afternoons for the different groups to reaffirm what the learners have learnt.

Ntobeko is committed to his learners performing well in the subject but overcrowding in the school is a challenge. The humanities Grade 11 class group has 88 learners, but the Life Sciences group is more manageable, with only 24 learners. He pointed out that it is very difficult to manage the large general group, particularly because some of the learners are weak in the subject. He claimed that the cause of learners' weakness is the policy of promotions and progression whereby learners move on to the next year of schooling despite not having passed Life Sciences. As a result, learners do not have a proper foundation in and understanding for the subject, besides which they are demotivated. He added that; *Life Sciences is not like History which is factual; it's a science and it requires more abstraction and its outcomes are different.*

Ntobeko said that he feels unhappy and depressed when he has to teach the general class group. Furthermore, a lack of resources which prevents him from conducting experiments, as stipulated in the policy guidelines. He said:

I become very frustrated because I cannot facilitate the process the way it's supposed to be done. I try ways to teach the concept and try to show them how the experiment is done and the results will be; not actually conducting the experiment. I basically teach the experiment and bring pictures for them to visualize certain apparatus, so that during the exams when those apparatuses appear on the paper, at least they are prepared.

In addition, he urges parents to buy study guides in order for learners to get used to the styles of questioning, and he asserted that it this strategy working for most learners. He has also developed an examination bank for learners to be able to access past examination papers and memoranda in preparation for their own examinations at times when it is convenient to them.

Reflecting on his emotional experiences with regards to curricular changes in Grade 11 Life Sciences, he stated that his emotions are mixed. While there have been a number of problems, he appreciates and welcomes the curricular changes. He further stated:

...because Life Sciences is a science, new discoveries are made through research. Therefore, I would say I welcomed the changes, for example genetically modified food, paternity testing, solving of cases through use of DNA

fingerprinting. Life Sciences was taught and assessed like History where learners had to reproduce [information]. A science needs to develop critical thinking; it's about reactions and products, technical, subject to change. They need to know what a hypothesis, a theory and a law are. How we conclude based on the findings etc.

Ntobeko claimed that much of the prevalent unhappiness comes from the missing link between the Grade 11 and 12 curricula. He further stated that the theme Environmental Studies is given only two weeks in Grade 11, despite the fact that this theme links with the Grade 12 theme, as well as that it is taught during the third quarter when the focus is on examinations. The section on molecular studies is taught in Grade 10 and not in Grade 11 so that by the time learners reach Grade 12 they have completely forgotten everything and one has to start teaching the section afresh. In essence, Ntobeko argued that there has to be a smooth transition between Grade 10, 11 and 12 topics. He emphasised *If I had a choice of not teaching Grade 11 syllabus I would do that. I would teach Grade 10 and introduce Grade 12 topics in Grade 11.*

Ntobeko believes that to correct the above situation, the change process should be as inclusive as possible. He suggested that teachers should be included at certain levels of any reform initiative. He continued to say that lead teachers can be brought in because learners change over time in terms of their strengths and weaknesses, and the subject advisors and curriculum reformers do not directly deal with learners on a daily basis. Ntobeko further suggested that the grouping of subjects or subject choices should be reviewed. Life Sciences is a science; it needs to be grouped with other science subjects.

With regard to good experiences that accompanied the curricular reforms, Ntobeko recalled that when he was teaching genetics his learners were understand its practical application. When learners had watched a television programme in which police investigate crime scenes and conduct paternity testing, they observed how these procedures are carried out and their use in daily life. In a related classroom activity, he discovered that his learners had a good understanding of DNA fingerprinting. Ntobeko said:

To hear my learners using the content and my explanations to understand and interpret their experiences and sharing with others in the class was my best

experience. For them to link what was taught in class with what is happening in the world around us was heart-warming. I was able to ask questions based on what they watched, and their understanding of the concept was enhanced.

However, he was disheartened when learners dodged his classes. Rather than admitting that they didn't understand the content knowledge, they simply avoided attending his lessons. As a result, he could not give them his support in overcoming their difficulties and when they wrote assessment tasks they failed these. This hurt Ntobeko deeply because *when they fail, I also feel I have failed.*

In Ntobeko's school there are two teachers for Life Sciences. They support one another through team-teaching and have a good working relationship. In the cluster, teachers also encourage each other in areas of need. The Harry Gwala District has a number of experienced teachers who are passionate and supportive, who meet to share ideas etc. He mentioned however that these meetings are not regular due to the distance between schools in the rural areas. When the teachers meet, they discuss various strategies on how to teach and approach certain concepts. He believes the support they give each other is beneficial. The teachers also attend workshops that introduce them to changes. Ntobeko highlighted that it is very difficult to move away from the norm to which one is used. Both teachers and learners had adapted well to certain teaching strategies and content, but when they have to be changed, this is often very challenging. Furthermore, changes are often implemented swiftly and during this period of transition some learners are lost along the way, as they are unable to adapt quickly enough. He continued to say that one needs time to bring everyone on board, but that the work schedule does not allow for this.

Discussing the impact that teacher's negative experiences have on teaching and learning, Ntobeko emphatically pointed out that a teacher is human; if he/she is not happy, then that affects his/her performance. He however emphasized the importance of not losing focus and stated that he teaches regardless of the circumstances because teachers have a responsibility to the learners. Despite all the challenges, he strongly believes that if teachers are passionate, they will always find a way to make a difference.

4.4. Melissa's narrative: the passionate one

Melissa has been a teacher for 26 years and has taught Grade 11 for more than fifteen years. She holds a Further Diploma in Education with specialisation in Biology, in addition to a Secondary Teachers' Diploma (STD). She is a Head of Department (HoD) at her school and also is acting as a principal. She is teaching Grades 10, 11 and 12 presently. Her Grade 11 class in 2015 had 80 learners. The school is unable to split this large group because the workload of the teachers is too heavy. Since the school has a Post Provisioning Norm (PPN) of one Life Science teacher, splitting learners into two groups will require an additional teacher. To overcome this challenge, Melissa admitted that she acted unethically by persuading learners to leave Life Sciences and take Business Studies instead in order to limit the class numbers.

According to Mellissa, group work is the strategy she employs in order to deal with large numbers when teaching. She makes sure that all learners get an opportunity to present their work so that she can discover the learners' weaknesses and strengths. In the afternoons and during the holidays also she holds extra classes. She stated that using an overhead projector rather than writing on the board would enable her to redirect her time to contact time. Melissa believes also that if the centre system is introduced at her school is introduced, whereby teachers are stationed in their classroom centres and the learners move from class to class, this will also save her time.

Melissa asserted that a number of curricular changes have been introduced throughout her teaching career. The Life Sciences curriculum is alleged to have undergone significant changes when compared to other science subjects. She mentioned that the Grade 11 Life Sciences curriculum has been changed a number of times, and that this has been frustrating for teachers. Melissa said:

To be honest, I sometimes feel very frustrated in such a way that I have even thought of leaving teaching. As time went on I started enjoying the change and saw the necessity of changing the curriculum. It does bother me that Life Sciences is experiencing changes now and again, year after year. It is the only subject that is facing this. I have also beaten myself up as to why I even took this subject as a major because of the frustrations I was experiencing.

The reasons she gave which contributed to her frustration were the frequency at which change was taking place, the provision of ineffective workshops and the insufficient support given. One or two days' workshops were not enough to provide the necessary support to equip teachers with skills to be confident to teach.

She emphasized this by saying: *I was not confident with the theory of evolution but I had to go and teach learners in such a way that they understood; that was really frustrating.* In ensuring that the curricular change will achieve the desired outcomes, Melissa argued that sufficient time and support should be provided through workshops. She also contended that the curricular changes should be accompanied by the necessary supporting materials and resources. Opportunities for in-service training, as well as holiday workshops lasting one or two weeks should be conducted, after which the implementation of the changes could follow. Melissa went on to suggest that follow-up programmes could be put in place which would open up opportunities for teachers to reflect on their challenges and successes.

Melissa is the only teacher in the school teaching Life Sciences. She stated that if she needed support from other teachers, she would approach teachers from the neighbouring schools and from the cluster. In coping with the challenges of implementing curricular changes, Melissa and the other teachers would be given documents, which they would unpack and have to digest by themselves. Additionally, they did not have a subject advisor. She stated that this meant that more studying that had to be undertaken by the teachers before they could begin teaching learners and that the resources were insufficient

Melissa described one of the negative emotional experiences that had arisen due to the curricular change. This is what she said:

I did not like the Grade 11 syllabus because it does not link nicely with Grade 12 work. So, I would groom my Grade 10s and prepare them for Grade 12 and let another teacher take the Grade 11s. I hated the animal section in Grade 11 and when I was told I have to take the Grade 11s, I was really frustrated. When I started implementing the changes in Grade 11 most of my learners failed. It was really frustrating and painful; failure was new to me because under the old syllabus my learners were passing with flying colours. After the change, they

were failing dismally. What I discovered was that I was still using the old methods for Biology and they were not working well in the new syllabus (NCS). I had to try harder in changing my approach in implementing the new curriculum.

Reflecting on the importance of teacher emotions in education, Melissa agreed that teacher emotions should be given attention since it is teachers who must implement changes; hence intense training should be directed to teachers. In emphasizing her conviction, she stressed that, *if teachers are not happy, their teaching is affected and so is learning.*

When her learners began to fail after the changes made to the curriculum, Melissa conducted some soul searching to address the issue. She realised that pointing fingers at the DoE would not help; this was confirmed when she said:

I had to pick myself up, learners had to pass, so I organised afternoon classes and more support material. In the following year, my learners passed and that made me happy.

Melissa asserts that emotional experiences affect teaching and learning. She added that being uncertain of what you are teaching negatively affects your confidence and self-esteem. Learners are likely to perform poorly because the quality of teaching is poor; she refers to her own learners who initially failed after the curricular changes were implemented.

4.4. Hlanzeka's narrative: the aspiring curriculum designer

Hlanzeka started teaching in 2011 and has 5 years' experience teaching Grade 11 Life Sciences. She also teaches Physical Science in Grade 12. She holds a B. Sc. in Genetics and Developmental Biology from the University of the Witwatersrand and a PGCE from the University of South Africa. She intends furthering her studies in the sciences, especially in Life Sciences. She stated that she is passionate about the subject and wishes to be a curriculum designer for Life Sciences. Her classrooms are manageable, and don't have challenges with overcrowding. However, her learners lack motivation. Hlanzeka struggles to find effective ways to bridge the gap in terms of her learners' understanding of certain concepts or content knowledge. Her learners also lack resources and textbooks,

especially when there are curricular changes as the school struggles to buy the relevant books. Textbooks are shared and when learners are given homework, copies are made so that they are able to work independently. The school does have a photocopier but the electricity supply is a challenge. She claimed that in the community where her school is situated parental support is non-existent. These are the contextual factors that this teacher deals with.

The role that Hlanzeka would like to see parents taking is to assist learners with school work, motivating them and helping them to see the value of education. She narrated an experience that she had when she was teaching Grade 9:

I wrote a letter to parents asking them to sign when learners have done their homework, because I was noticing that learners copy sums from each other in the morning. They would appear to get the sums right when given as homework because of copying, but would not pass tests on the same sums. None of them returned the books signed.

Furthermore, she mentioned that teachers are now demotivated, and that they also need encouragement and especially support on how to instil discipline in their learners, since because corporal punishment is outlawed. Hlanzeka stated that there are concepts and topics which learners find difficult to understand - such as the sewerage system and as the human impact on the environment - because of the lack of insight and exposure to the wider world among schools in the rural communities. She experiences difficulty when she has to use prior knowledge in introducing some of her lessons.

Hlanzeka was trained in CAPS whilst at university and therefore did not experience any curricular changes during her teaching career. She has therefore not been frustrated by the changes that were instituted by CAPS.

4.5. Nhlanhlo's narrative: a teacher with a purpose

Nhlanhlo has been a teacher for about 3 years and has been teaching Grades 10, 11 and 12. She holds a B. Ed. with Biology 1, 2, and 3 from Durban University of Technology. She also teaches Physical Sciences. Her class of Grade 11s numbers 67 in total, separated into

two groups of 44 and 23. The teaching and learning strategy that Nhlanhlo employs is to place the learners into small groups. Using groups is not always effective and she mentioned that she would only discover who benefited from the groups and who did not upon marking the learners' work or activities. She explained that she started teaching when the curriculum had already been changed to CAPS and had thus not been exposed to previous curriculum changes. However, she claimed that what she had been taught at university was different from CAPS. She added: *It was very difficult when I started teaching, I had mixed feelings; I needed more time to study before presenting to learners.*

Another challenge that Nhlanhlo faced was that some learners use organized transport and were unable to stay behind for extra lessons. She was very frustrated because she felt the Grade 11 syllabus did not link up with the Grade 12 syllabus. She was deeply hurt and frustrated when her learners failed the common papers. She explained her feelings as follows: *...when learners fail, that reflects on you as a teacher also having failed, and it means you have not taught when you know you have taught.*

She strongly affirmed that the curriculum reformers should ensure that the necessary resources are in schools before the implementation phase starts, especially the apparatus for experiments. Additionally, the people conducting workshops should be confident about the knowledge content. Nhlanhlo believes that workshops do not fully equip teachers with necessary skills to implement curricular change. She also stated that insufficient time was allocated for the workshops, and that the workshops were not detailed enough. She argued that the fact that practical work has been allocated more marks is unfair when some schools are not able to conduct this work, including her own school due to a lack of equipment and training. Nhlanhlo said that if teachers were part of the reform planning, then some of the challenges would have been avoided.

Nhlanhlo contended that although change is difficult and might bring about discomfoting feelings, there are positive changes that she applauded. Despite the challenges that accompanied the new emphasis on the practical section, she applauded the increased weighting of the practical section, because it forces teachers to give attention to the practical section, which was at times neglected in the past. When learners were conducting experiments, she indicated that they had a *wow experience*. It excited her as a teacher that

her learners were showing an interest in this aspect of Life Sciences. From Nhlanhlo's perspective, learners learn better when theory is merged with practice.

She confirmed that teacher emotions are closely linked to the situation at school. Furthermore, she said: *...if teachers are happy, results are likely to be good, and if they are not happy, that may impact negatively on learners.* Nhlanhlo noted that teachers know their obligation to teach their learners regardless of how bad the situation might be. Teachers have to find with strategies as coping mechanisms.

Nhlanhlo did not undergo any training on CAPS; she started teaching when the workshops had already been run. She was inundated with documents that she had to try to come to terms with on her own. There were times when her learners asked questions which she could not answer. She admitted that learner understanding and performance was not good: *I could feel they were losing interest.* She tried various strategies, including giving more time to her work; studying and preparing well for each day; making photocopies of useful material and bringing in micrographs to assist the learners with making sense of what was being taught. She affirmed that support from other teachers was very beneficial and she indicated her wish that more such opportunities be opened up. Some teachers of the cluster were successful and experienced. As such they were a vital source of encouragement and guidance, but because of the distances between their schools cluster meetings were not held as often as the teachers would have preferred. Similarly, the subject advisor workshops were usually held twice a term, which Nhlanhlo described as being too infrequent.

4.6. Deli's narrative: the hopeless and frustrated teacher

Deli has been a teacher for sixteen years and has taught Grade 11 for nine years. She also teaches Grades 10 and 12. She holds a Diploma in Education and a Bachelor of Arts degree with Biology 1, 2 and 3. In 2015 her general class had 70 learners and her Life Sciences class had 29 learners. A challenge that she is experiencing are the large numbers of learners and the general class not performing well. She is however trying to use strategies to enhance learning by grouping them and letting them research and present to the class. She would like to see them taking responsibility for their learning.

Deli explained that a number of curricular changes have taken place during her teaching career, from OBE, to NCS and now CAPS. She further mentioned that it is very difficult to adapt to new strategies and to pedagogy that is always changing, saying:

It's quite frustrating. Learners of today are lazy; changing the syllabus swiftly confuses us as well as the learners. The curriculum of Grade 11 Life Sciences is not well organized, and the way it's introduced to us as teachers is not good. If our department could borrow ideas from the neighbouring African countries on how their education systems are structured that might improve our own system. Take for an example Zimbabwe, which is one of the poorest countries, but despite this its education system is highly organized. Even the learners from there are good.

She suggested that if there are curricular changes to be introduced, in-service training and intense workshops must be organised to support teachers. She narrated her worst experience with one of the introduced changes. Deli had to allow for an opportunity for her classes to engage in a debate. The debate was unsuccessful because learners did not understand the content very well and because facilitating the process was difficult due to the large size of the group. Furthermore, the work schedules of are restrictive and do not allow for time to be able to conduct debates.

Deli affirmed that feelings of frustration are experienced when teachers are unhappy. She had even thought about resigning and these feelings were shared by some of the other teachers from the cluster. She strongly argued that if teachers are involved at a certain stage of a reform initiative, this might reduce teachers' frustrations and confusion. She added:

Teachers should not be frustrated; if they are not happy, they can't be as effective. There is a link between what goes on within the teacher himself (his emotion) and how teaching and learning takes place.

Amongst the challenges that she has encountered is the concept of evolution, which contradicts with the teacher's religious beliefs. She admitted that it was very difficult to teach the concept when she was not comfortable with it. Deli confirmed that such negative

experiences affect her teaching. Her response in the classroom when she is unsure about the topic is to give learners tasks to do on their own, which they then present. She feels that this approach enables her to give learners more work and enables her to identify areas which need more attention. She admitted that her learners generally perform poorly during the first term, because during this time, *I am also not sure of certain concepts*.

As teachers of the cluster, Deli and her colleagues often meet two or three times per term for support and moderation of each other's work. Deli expressed her wish that they meet more often, but this is difficult due to the distance between the schools. As with the other participants, Deli emphasised that learning communities where teachers meet with an aim of mutual development and support present be a potential solution to some of their problems and challenges.

4.6. Analysis of data and emerging themes

4.6.1. Introduction

This section presents the data generated from the individual interviews, poetry or collages. Narratives have been constructed based on the teachers' stories about their emotional experiences, perceptions, and their practice. These stories assisted in creating meaning and understanding of how these teachers have experienced, coped with and responded to the curricular changes in Grade 11 Life Sciences.

As a researcher my intention in this section is to illustrate and describe as accurately as possible 'the storied lives' (Connelly & Clandinin, 1990, p.2) of these teacher participants. This section is a response to the following research questions:

1. What emotions do grade 11 Life Sciences teachers experience as a result of curricular changes?
2. How have grade 11 Life Sciences teachers coped and responded to curricular changes?

A deductive method of analysing data has been employed. The themes presented emerged from the data collected through interviews, poems or collages and aligned to the conceptual and theoretical frameworks. The analysis of the data is presented in two stages. The first stage of analysing data is tabulating the participants' responses in

response to the two questions. The second stage is analysing the data in relation to the literature and the frameworks, as the lenses to be employed in this analytical process.

Summaries combined from the collages, the poems and the interviews of all six participants were tabulated in Tables 3 and 4 to enable the reader to make sense of the responses to the research questions (see also Appendices 1 and 2). The following tables indicate the emerging themes and also the frameworks to be used as lenses when analysing data.

Table 3: Aligning responses to the research questions to the themes and frameworks.

Descriptions from text	Theme	Theoretical/conceptual framework
<p>Happy, satisfaction, “wow” experience, feeling good, results likely to be good, welcoming the change, mixed emotions, frustration, confusion, not happy, discouraged, not motivated to teach, feelings of not being effective, depression, despair and wanting to exit the system, being uncomfortable, hostility towards the subject, feeling bored, teaching because you have to but not enthusiastic, feelings of guilt, lack enthusiasm, uncomfortable, hurts deeply, painful, very difficult, no proper understanding and no passion, not motivated to teach, not sure of own teaching, low self-esteem, the feeling of having failed, not being effective, lacking confidence, berating the choice of the subject as a major (feelings of regret), feels negatively, a life of two halves (uncertainties and surprises).</p>	<p>Mixed emotions.</p>	<p>Hargreaves’ emotional geographies.</p>
<p>If learners fail, the teacher has also failed, (you are a failure), lacking confidence, low self-esteem, not being effective, hating the subject, poor result reflects on the teacher, willing to experiment, passionate, committed teacher, giving more time to the work.</p>	<p>Feelings linking teaching, learner performance and identity.</p>	<p>Zembylas’ genealogy of emotions (identity, a result of social construction).</p>

4.6.2. Mixed emotions

As mentioned above, according to Hargreaves (2001, p 1056), emotional geographies refer to the relative closeness or distance in interactions between human beings that determine our emotions regarding relationships to self, others and the world around us. This concept is used to explore the Grade 11 Life Sciences teachers' emotions in regard curricular changes.

All teachers experienced mixed emotions. They were both positive and negative about the introduced changes. Melissa asserted that she accepted the necessity of changing the curriculum, but was frustrated by the frequency with which the change was occurring; whilst Ntobeko claimed that he welcomed the curricular changes due to Life Sciences being a science that must be exposed to new discoveries, but at the same he admitted that he was frustrated by the very same reform initiatives. Pinkie, Ntobeko, Melissa, Nhlanhlo and Deli affirmed that they also experienced feelings of frustration because of the lack of support and resources, and because of being excluded from not playing an active role in the reform initiatives.

All five of Hargreaves's emotional geographies are employed to explore how teachers make meaning of their emotional experiences in relation to curricular changes. Hence, the moral, physical, political, socio-cultural and professional geographies are referred to; because they are fundamentally relevant to the study. Briefly, the emotional geography of moral distance depends on the degree to which teachers achieve their duties, goals or purpose; that of the physical distance is connected to the degree of proximity, intensity, frequency and continuity in interactions; that of the political distance is determined by the levels of power or powerlessness experienced; that of the socio-cultural distance is shaped by cultural differences between teachers, learners and parents; and the professional distance is based on the extent of the teacher's instructional knowledge, expertise and professional judgements.

In response to the first research question, the teachers experienced mixed emotions in response to the Grade 11 Life Science curricular changes, ranging from joy and excitement to frustration, anger and confusion, as reflected in their narratives. Drawing from the six teachers' narratives, it was evident that all the teachers welcomed the curricular change. They believed that the Life Sciences curriculum had to be transformed due to its nature as

a field of science and also in order to correct the missing link that existed between the Grade 11 and 12 curricula. The participants in the study emphasised that Life Sciences is a science and is therefore open to new discoveries and research methodologies. With the changing science curriculum, the emphasis was now on content, inquiry, practical work, investigations and new models of pedagogy (Erduran & Msimanga, 2014). Teachers understood the need for the introduction of curricular changes; hence their responses were positive in that they expressed happiness that the curricular changes in Grade 11 Life Sciences had been introduced.

According to Hargreaves (2001, p. 1066) “Emotions are moral phenomena ... closely bound to and triggered by our purposes.” Every teacher is a specialist of his or her own subject and would have preferences regarding what should form part of the content knowledge and the curriculum of that subject (Jansen, 1998; Hoadley, 2011; Mouton et al., 2012). When the teachers’ purpose in teaching is not achieved, negative emotions are experienced. Similarly, when teachers experience success with their teaching and achieve their goals, feelings of happiness (positive emotions) are experienced. This is strongly evident in Ntobeko’s, Melissa’s, Nhlanhlo’s and Pinkie’s responses when they were asked about what emotions they experienced when curricular changes in Grade 11 Life Sciences were effected. Ntobeko commented that: *Life Sciences is a science; new discoveries are made through research. Therefore, I would say I welcomed the change.* On a similar note, Melissa also stated that: *...as time went on I started enjoying the change and felt the necessity of changing the curriculum.* However, Nhlanhlo asserted that she was not *happy but at the same time getting new knowledge is helpful.* Pinkie also confirmed the importance of curricular change and the adaptability required of the teaching profession by emphasizing that *teachers need to be lifelong learners and scholars.*

According to Hoadley (2011) the changes that were introduced were necessary due to the political history of South Africa. She further highlighted that amongst other changes, the emphasis was now placed on learner-centred approaches, the role of the teacher changed, and the content knowledge was also transformed. Jansen (1998) and Mouton et al. (2012) echo these sentiments, noting that the teacher’s world is full of curricular changes as a response to the political transition that started in 1994. The six participants in the present study also recognised the need for change in the South African education system.

Hargreaves (2001) asserts that the emotional geographies of teaching play a role in how a teacher interprets his/her world. Hence teachers experienced different mixed emotions with regards to curricular changes, depending on their own emotional geographies. Ntobeko, Melissa and Pinkie accepted the need for the Grade 11 Life Sciences curriculum to change, but also experienced frustration at how the processes of curricular changes were conducted. It can therefore be claimed that teachers intellectually understood the necessity of introducing curricular changes due to the new era that the country had entered, but were also discomforted by the changes due to the concept labelled by Frykholm (2004) as the emotional discomfort. He contends that when the role of the teacher changes from being that of the knowledge bearer and the focus falls more on the learners' role, he/she loses authority and the teaching rituals change, so that emotional discomfort sets in. Hence feelings of frustration are experienced. This links up with the political distance (loss of power in the sense that the changes were simply thrust upon the teachers) and the professional distance (loss of confidence in terms of one's expertise in one's profession) Hargreaves (2001) asserts that teachers are shaped by their worlds. If one's world is full of uncertainties, teachers will be confused and frustrated.

It is notable that in Pinkie's poem below, contradictory emotions surfaced in comparison with what she stated in the interview.

WHY THE CHANGE?

OBE, they said
Then NCS they said
Why change?

Two and two has always been four,
And never has changed.
But why change syllabus
Now and then, today and tomorrow.

A cell will always be a cell
And Newton's Law shall always stand
Just like meiosis is a type of cell division.

Come rain, come wind.
Just like the sun,
Just like the moon,
Knowledge must not always be tampered with

The pain, confusion, and frustration;
The order of the day
Oooh, shame to the guinea pigs,

Let the spirit of togetherness reign,
Let the strong self-press on
The road goes on.

Poems are able to bring to the surface underlying emotions (Furman, Langer & Taylor, 2010). Leavy (2009, p. 68) contends that the subjective truth can be transmitted in a powerful way through the language, rhythm and space of poetry. In a very condensed way and with a careful choice of words, Pinkie has been able to vividly describe why she feels that on-going changes should not be introduced, because they bring about pain and frustration, although, due to the spirit of working together as colleagues, the teachers are coping. Hargreaves (2001) asserts that the degree of proximity, closeness and interaction At the same time, during the interview, she stated that "*topics in Grade 10, 11 and 12 do not link* and this justified the need for curriculum reform, but this should be *driven by teachers*. Furthermore, she asserted that teachers should be scholars and lifelong learners. This indicates that Pinkie agreed with the necessity for the curriculum to be changed but that it was the way in which these changes were instituted that she did not approve of.

Both Deli and Pinkie advocated greater teacher involvement in the earlier stages of curricular reform, with the latter calling for a less exclusionist bottom-up approach which should include dialogue. Hargreaves' political distance which has to do with power and powerlessness impacts on the teachers' daily work. A lack of interaction between the decision makers and the teachers increases the teachers' sense of political distance and powerlessness. Van Veen and Slegers (2006) point to the study that Eisner conducted in the United States of America, in which he reviewed 50 years of school improvement. He found that teachers need to feel that they are a fundamental part of the reform, or even to be in control of it. Teachers want to have a stake in how schools change.

Pinkie's poem, when contrasted with her interview confirms that people "mask their emotions in many occasions" (Carl, 2005, p. 814; Hargreaves, 2001; Zembylas, 2003b; Becker et al., 2015) which has important implications for the present study on teacher emotions. However, poetry has the ability to bring to the surface subjective emotions which are deep seated and of past experiences (Furman et al, 2010). Furthermore they contend that poetry allows an interaction between the outside and inside worlds of the person that are usually intricate, conflicting, and even dialectical. Using poetry as a method of enquiry has enabled the present study to uncover the subjective truth that Pinkie was unable to fully divulge during the interviews.

In the data gathered, teachers expressed feelings of contentment, satisfaction and joy when they experienced success in the implementation of the curricular changes. Melissa was happy when her learners started performing well and Ntobeko appreciated it when his learners showed understanding of the new concepts, saying that ... *it was heart-warming when my learners were interpreting, relating and applying what I had taught in my class.* Hargreaves (2001) contends that teachers crave success and appreciation; and such recognition makes them want to work harder. It is however noted that none of the teachers mentioned that they felt appreciated when their learners were achieving well in their subject. What gave them the urge to fight for success was their moral obligation to their profession.

Pinkie affirmed this when she stated that one of her breakthroughs was enabling her learners to conduct experiments on their own. The conduction of experiments was

emphasized in the CAPS syllabus, but learners had had minimal if any exposure to this facet of the curriculum. . Pinkie, Ntobeko, Nhlanhlo and Melissa confirmed that in the past teachers had neglected the practical section. Pinkie was very happy with the introduction of Paper Three to the Life Sciences Grade 11 curriculum, which focused on experiments. She now was able to merge theory with practice. According to Erduran and Msimanga (2014), the new pedagogy puts more emphasis on debates, practical work and investigations. The positive impact thereof is also evidenced in Melissa's narrative when she stated that:

My learners were doing well in Biology but after the introduction of curricular reforms in Grade 11, my learners were failing dismally. I had to work very hard at finding potential causes which made my learners fail. After discovering that my strategies were no longer appropriate and had to be changed, my learners started doing well and, yoh, I was so happy.

It is noted that teachers feel happy when the purpose of their teaching is achieved. Hargreaves' (2001) notion of moral emotional geographies is thus evidenced in the data. Teaching is bound up with the purpose of ensuring that the learners achieve the desired outcomes. When the outcomes are not met, the teachers experience negative emotions including sadness and a sense of failure. A teacher has the responsibility of ensuring that the subject matter knowledge that is taught to learners is understood (Shulman, 1997, 2004) and that learners are promoted to the next level. When teachers do not achieve that goal, frustration surfaces. The collages drawn by Nhlanhlo and Ntobeko and the poem created by Pinkie express clearly that feelings of sadness are experienced when learners are performing poorly in regard to the concepts that have been introduced by the teacher. Every teacher's dream is to see their learners being successful and performing well in his or her subject. If that goal is not realised, feelings of inadequacy and unhappiness are experienced. However, when the goals of teaching are achieved, positive feelings such as excitement, willingness to take risks and try something new, as well as satisfaction and joy, are experienced. Van Veen and Slegers (2006) affirm that teachers have an inevitable personal investment in teaching. The link between emotions and the moral obligations of teaching helps teachers to make choices from a wide variety of options, such as whether to make adjustments where needed, whether to adhere fully to their assigned tasks, and

whether to commit their full energy to attaining their purpose. In an emotions study conducted by Hargreaves (2001), teachers experienced positive emotions when they achieved the desired outcomes and were appreciated. As a consequence, they were willing to go the extra mile, as well as to try new approaches and to take risks.

The data gathered revealed that teachers experienced different challenges in their schools; but they had also developed various strategies for dealing with their problems. Five of the teachers who participated in the present study were able to try various responsible methods aimed at helping their learners to adapt to the changes. Nhlanhlo and Melissa increased teaching and learning times, while Pinkie and Deli employed more learner centred methods. Furthermore, Melissa was able to reflect on her own practices when her learners failed. She discovered that her methods were not CAPS compliant and she had the courage to risk trying new methods, which eventually yielded positive results. Ntobeko said, *I grouped my learners into different ability groups and remained with them for an hour in the afternoon*. Pinkie ensured that she engages in thorough preparations before teaching her classes. Hlanzeka and Deli benefitted from cluster meetings to improve their grasp of the content and methodologies of the new curriculum.

However, Deli's teaching methods were questionable in that she gave learners work which she herself did not understand, admitting that: *if I'm not sure about that topic I give learners tasks to do and then they present. I am then able to pick up areas that need more attention*. Shulman (1997, 2004) assert that one of the seven domains of knowledge is content knowledge. If teachers are not professionally developed in this aspect, then teaching and learning is compromised. Teachers are therefore not confident to teach the concepts. Deli lacked content knowledge and was not sure how to cope with the challenge she was experiencing. She said, *I am also not sure of certain concepts and it was difficult to present topics I was not comfortable with*.

According to Hargreaves (2001), to become a passionate, hardworking, committed teacher is strongly linked to personal character, rather than how teaching is structured. How teachers perceive themselves as teachers is critical for their self-esteem, and determines how they cope during periods of change; Van Veen and Slegers (2006) term this the professional identity. Drawing from the participants' responses, Melissa alluded to the

importance of how the teacher views curricular change as an individual. Pinkie affirmed this by stating that she believes that every teacher should read ahead and always be prepared, taking responsibility for ensuring their full understanding of what and how they are teaching. This confirms that how a teacher interprets and reacts to curricular changes is also influenced by how the teacher sees him/herself as a teacher.

It can be claimed that the contextual factors applicable to rural schools may exert their own influence on how teachers respond emotionally to curricular changes; this is affirmed by Hargreaves' concept of the emotional geography linked to socio-cultural distance in which the contexts of the teachers, learners and parents are often mismatched. However, if the teacher's moral disposition is strong, this will assist the teacher in taking responsible decisions during times of change.

It is also evident from the collected data that negative emotional experiences result in teachers experiencing feelings of dissatisfaction, confusion and frustration. Feelings of frustration appeared to be strong and prevalent among all the participants aside from Hlanzeka, who didn't experience any curricular changes since she began her teaching career when CAPS had already been introduced and she was introduced to this curriculum during her university studies. This suggests that if teachers are given more time and input in preparing for curricular changes prior to their implementation, then the desired outcomes may be more likely to be achieved. Jansen (1997) contends that teachers are seen as the change agents who would be able to bring about the required changes; therefore, "appropriate professional development" is "essential" to equip teachers with the necessary skills (Erduran & Msimanga, 2014, p. S36). To confirm her own lack of content and pedagogical knowledge, Pinkie mentioned that she did not understand some concepts like evolution, but she had to read up on the topic prior to teaching her classes. Her preparations were intense. Melissa also highlighted that she had failed to employ the appropriate strategies associated with the NCS, and that had resulted in her learners not performing well in the externally set examination papers. Hence, teachers such as Melissa were struggling with adaptation to the new changes, because they were not adequately trained. The data collected from the participants indicated that one of the major reasons that the teachers are uncomfortable about the curricular changes is the physical distance, (as described in Hargreaves' (2001) conceptual framework of emotional geographies), that

is increased between the teachers and the reformers or advisors who should be supporting them during the transition phase. There were times when the whole Harry Gwala District did not have an advisor, which would have presented a very challenging period for the teachers.

According to Hargreaves' (2001, p. 1070) the phenomenon of professional distance, a facet of his emotional geographies, is increased when teachers feel that their expertise is being questioned or is of insufficient quality or standards. Teachers want "to preserve their classical professional autonomy" from critique by colleagues or superiors. Furthermore, teachers do not want parents to engage too closely with their profession; they believe that they are the teaching professionals with expertise, and prefer others not to become involved in their work. If the professional distance is reduced, teachers become vulnerable to criticism. Additionally, the theory of professional distance in emotional geographies asserts that teachers seldom seem to doubt their own judgement as faulty or wrong. This is valid to the degree in that resistance to change is often based on the fear of being exposed as a "failing educator" and hence having one's professionalism and expertise questioned.

However, contrary to the above, all the participants in the present study expressed a yearning for a close professional distance between the subject advisors, teachers of the cluster and themselves. Deli felt the need for other teachers to support her because she was encountering problems in understanding evolution and how to teach it and since the topic contradicted with her beliefs. Nhlanhlo and Melissa wanted subject advisor support before and after the implementation of curriculum changes so that challenges arising during teaching and learning could be dealt with. Again in contrast to the above assertions by Hargreaves, when the teachers who participated in this study were not able to achieve the desired outcomes, they indicated that they reflected on their practices. They were able to come up with new strategies which, when applied, improved learner performance. Melissa particularly narrated her experience when she was not able to employ CAPS aligned methodologies and her learners performing badly. After engaging in her own reflections and changing her methods, her learners' performance improved. This suggests that teachers are willing to be criticised, as long as they can either find solutions themselves, or be supported to do so. However, this opportunity for professional criticism should be conducted by other teachers in the profession who share their experiences and frustrations,

with the aim of professional development.

It should also be noted that teaching is a social phenomenon. Hence teachers should understand that teaching attracts interest from a number of stakeholders, viz. parents, officials, the SMT and the community at large. During periods of curricular change, the professional distance between the teachers and the relevant structures should be narrowed. It may be suggested then that the professional closeness in terms of teachers' emotional geographies should be extended to the relationships that exist between teachers, other teachers in the cluster, officials and all other structures in support of teaching. In this study, the data suggested that there needs to be increased contact between the teachers, the subject advisors, the teachers of the cluster and curriculum reformers. Shulman (1997) asserts that one of the most effective principles of teacher learning (the development of teachers in their professions) is collaboration, where effective learning communities distribute their expertise in support of each other.

Emotional distance is compounded when the physical distance aspect of Hargreaves' emotional geographies is wider, as was the case with the participants in this study: they often felt that the "degree of proximity, intensity, frequency and continuity in interactions" (Hargreaves, 2001, p.1062) was not sufficiently high and that they lacked sufficient closeness with their primary sources of support, which are based on "emotional understanding and the establishment of emotional bonds" (Hargreaves, 2001, p. 1071). Furthermore, Hargreaves (2001, p. 1071) adds that "the physical emotional geography is the most evident [of all the emotional geographies]," highlighting the crucial importance of this component of his theory. As one aspect of receiving support, Melissa recommended that follow-up programmes which should take place in schools to address challenges that emanate from the implementation of a new curriculum. In support of follow-up programmes, Gusky and Yoon (2009, p. 497) assert that "all studies show positive improvements in student learning" when follow-up occurred in "significant amounts" after the conclusion of "the main professional development activities." It is therefore important that opportunities are created in schools where teachers can engage in follow-up activities.

Hlanzeka was a notable exception in the study in that she is one teacher who was not frustrated by the changes that accompanied the introduction of CAPS. The reason she gave

was that she was well versed with CAPS and with the Life Sciences Grade 11 curriculum through her university studies. She also had not had to contend with switching from one curriculum to another, since she had only ever taught under the CAPS system. Research conducted by Hoadley (2011) and Jansen (1997) indicate that teachers do not implement the curriculum as planned, due to a number of contextual factors, including the unavailability of learner support material and resources. Pinkie, Ntobeko and Melissa all mentioned that they lacked CAPS compliant resources and equipment. Though there are no guarantees that the desired curriculum will be implemented, but measures can be taken to ensure the success of the changes and reforms (Van Veen & Slegers, 2006).

4.6.3. Teachers' emotional experiences are linked to their teaching and identity.

NECESSARY EVIL

Being a teacher, it's a life of two halves,
Life full of surprises and uncertainties.
A journey that needs a traveller,
A traveller being an explorer.

This excerpt is drawn from Hlanzeka's poem. It highlights how she perceives herself as a teacher in the period of curricular changes, in other words, her identity. The experiences she has had made her feel a teacher is an explorer; it is a teacher's life to explore new knowledge and new methods of transmitting this knowledge to learners. This resonates with the theory of genealogy of emotions that states that a teacher's identity is continually changing and is constructed by their experiences (Naidoo, 2012). The theoretical framework of Zembylas (2003b) genealogy of emotions offers an appropriate tool for understanding the link between teacher emotions, teaching, learner performance and the teacher's identity. The genealogy of emotions as a theory suggests that when teachers engage in the interactions and dialogue with their learners in the classroom and with other teachers, as well as with the wider community, their identities are reconstructed. Naidoo (2012) mentions various types of identities (multiple identities), one of which is the professional identity. The professional identity of a teacher, according to Naidoo (2012, p. 25)

...is manifested in their classroom practices by way of deliberate choices made in planning lessons, style of teaching, activities with which they engage learners in

the classroom, their discipline measures, engagement with school activities... partially influenced by their feelings about themselves, in the context of the school and society's recognition of them, as well as their feelings about their learners.

Ntobeko, Nhlanhlo, Deli, Pinkie and Melissa acknowledged that if they do not achieve the set outcomes for their learners, then they have failed in doing their job to teach their learners such that they pass. They then see themselves as “failures”. They lack confidence when standing in front of the class and teaching learners about concepts and topics that they themselves are not sure about. Their self-esteem is lowered and they start to develop feelings of hate toward the subject. This emerged in Nhlanhlo’s narrative when she asserted that, *when your learners fail, the results reflect on you as a teacher to also having failed..., further meaning that you have not taught when you have taught.*” Nhlanhlo sees herself as a failure who gave lessons but was unable to teach and who does not know her subject. This is how she views herself in the sight of other teachers, learners, parents and the community at large. As noted above in Chapter Two, Zembylas (2002, p. 83) affirms that genealogy of emotions describes:

the ways in which these emotions are experienced in relation to the teacher self (individual reality), the others (social interactions) and the school culture in general (socio-political context).

All these perceptions influence the teacher’s identity and also impact on his/her emotions. For teachers, it is critical to understand the foundations of their identity. Keltchermans (2006) resonates Zembylas (2003b) in arguing that feelings are influenced and shaped by social and cultural interactions; and furthermore that the emotional reactions of individual teachers are closely linked to their own personal, social and professional identity.

The section below is answering question 2 which seeks to understand how teachers have coped and responded to curricular changes. It starts with a table tabulating participants’ responses and thereafter the analysis.

Table 1: Aligning the responses to research question no. 2 with the themes and the frameworks.

Description	Theme	Theoretical/ conceptual framework
<p>-Using group work, presentations. learners marking their own work, taking responsibility for their own learning, use of learner centered methods, finding ways to teach a concept, finding ways to deal with the change, change method of teaching, conducting experiments, use of learner centered methods such as hands-on techniques and research and presentations, differentiated lessons, use of debates, organizing study guides for learners, lack of books, use of an exam bank, teach learners how to conduct experiments, improvise and use visuals (pictures), putting what is taught into practice, applying content.</p>	<p>Differentiated strategies: Bag of tricks</p>	<p>Zembylas' genealogy of emotions (social interaction and socio-political context)</p>
<p>A teacher being a scholar and a lifelong learner, read ahead and always be prepared, read more books, a teacher is a designer of learning programmes.</p>	<p>Self-transformation: The teacher as a scholar and a lifelong learner</p>	<p>Zembylas' genealogy of emotions (individual reality)</p>
<p>Cluster meetings relieve stress and frustration, support by the subject advisor, support by other teachers, setting assessments tasks together, mutual support on how to teach a concept, use of HOD support.</p>	<p>Collaboration: The spirit of togetherness reigns</p>	<p>Zembylas' genealogy of emotions (social interaction)</p>

4.6.4. Differentiated strategies: “Bag of tricks”

One of the major changes to be introduced to Grade 11 Life Sciences was the emphasis on using learner centred methods (Jansen, 1998). All six participants engaged in various methods to try to adapt to the curricular changes. They mainly used the strategies of group work, learner presentations, and learners marking their own work; making learners take responsibility for their own learning. These teachers worked hard at finding ways to teach a concept; they were not satisfied when they were unable to perform at the desired standard. These teachers were compelled by the purpose they aligned their teaching with, namely, the success of their learners. Other strategies employed included the formulation of the differentiated lessons, allowing learners to debate topics in class, organizing study guides for learners, the use of an exam bank, conducting experiments etc.

When the biographical details and the challenges faced by the participants were examined, one common feature that emerged was that they were all teaching in overcrowded classrooms. The use of learner centred methods is very challenging in large classes. In support of this argument, Naidoo (2012) contends that the effectiveness of the learner centred approach is not guaranteed in schools where there is overcrowding, and a lack of relevant support material for learners and teachers. In the present study, Melissa affirmed that *the [curricular] changes... did not come with the necessary supporting materials, resources and training*. Putnam and Borko (2000) emphasise that teaching and learning is enhanced and transformed by tools that support teachers to do their work. This suggests that the necessary resources should be made available for teachers to access when needed, especially during times of transition. Both factors discussed above, namely overcrowding and a lack of resources (which are particularly critical during times of curricular reforms), can be analysed using Zembylas’ genealogy of emotions. These form part of the socio-political context that is one of the three factors identified as impacting strongly on teacher emotions. Such contextual challenges lead to frustration, anger and depression among teachers as they struggle to cope.

When confronted with challenges relating to their inability to understand the curriculum changes, teachers dug deep within to ascertain whether they could respond to this

challenge and how. Some felt that they could not rely on themselves, but six sought support from other teachers and stakeholders. This indicates that the manner in which a person adapts to change, depends on his/her beliefs, values or convictions about the potential providers of support - through social interactions and the wider context, using Zembylas' (2002, p. 83) terminology. Some teachers may feel that support can be accessed when approaching a certain individual, while others may prefer to be self-reliant, depending on the individual's reality, their social interactions and the context in which they are situated (Zembylas, 2002, p. 83). Hargreaves (2001) also both indicate that teachers' classroom practices are hard to change because teachers make sense of the change initiative through unique filters of their own experiences, viewpoints, values, personal resources, theories, contexts and ideologies. Ntobeko affirmed this when mentioning that the group method does not always benefit every learner, with some learners hiding within the group and not benefiting from this method of teaching. He also noted that *you lose some learners as well as some teachers during a transition phase*.

Studies have indicated that when change or reform initiatives are introduced, thorough and on-going workshops should be conducted to equip teachers with necessary skills as change agents (Jansen, 1997). Zembylas (2002) notes the importance of social interaction as one of the three pillars determining teacher emotions. Hence, interacting in informative, clarifying, supportive and mutually beneficial workshops can assist in alleviating the stress and frustration of teachers as they implement curricular changes. However, the school programme is structured in such a way that it is extremely difficult to set aside time when these follow-ups may be fitted into the school plan. Added to the lack of time availability for workshops, five of the participants indicated that initially they did not have a subject advisor and were thus not workshoped with efficacy. However, some attempts were made to acclimatise the teachers to the changes. Melissa did attend workshops but she claimed that she *came out of the workshop... lacking clarity and was not sure of what she must teach*. Melissa, Ntobeko, Hlanzeka and Deli stated that the facilitators conducting workshops with them were themselves not certain of the content they were presenting. Hence the workshops that the participants in the present study attended did not equip them with the necessary skills to be able to implement the curricular changes with confidence. However, Guskey and Yoon (2009) assert that well-run workshops cannot be regarded as a

waste of both time and money; if follow-up programmes are put in place there is evidence that suggests that workshops have a positive influence on learner performance. During these workshops, topics of concern are tackled. The more experienced teachers can provide demonstration lessons of how they deal with areas of difficulty. In a similar vein, Nhlanhlo argued that support should be extended to schools in a system in which teachers should visit each other and hold reflective sessions on how each teacher could improve his or her teaching. Melissa added:

Enough time should be given.... Training that will be long, for example one or two weeks is needed, and then implementation can take place. Follow-up support programmes should be put in place which should open up opportunities for teachers to reflect on their challenges and successes. Teachers will also get a chance to share how they can tackle problematic areas.

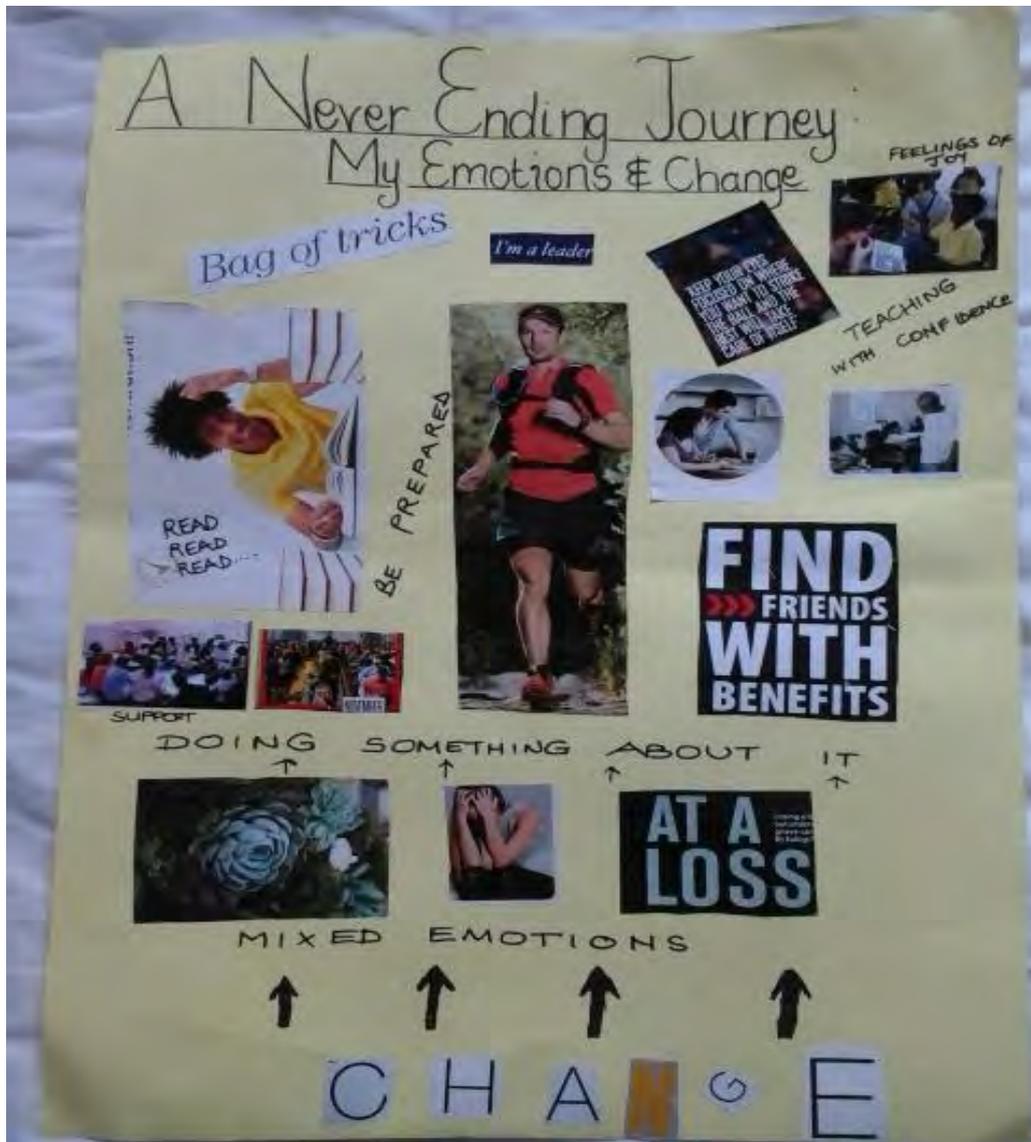
Zembylas's (2002) notion of genealogy of emotions suggests that teachers have an ability to challenge their emotional responses and free themselves from inappropriate responses. Instead of becoming "sites of resistance" teachers' emotions can become "sites of... self-transformation", empowerment and development (2003b, p. 213) in response to challenges such as curricular reforms. Melissa explained that she had reflected on challenges that had contributed to her unsuccessful implementation of the curricular changes; and she developed potential solutions to alleviate the situation. Putnam and Borko (2000) affirm that reflection is critical for developing teachers' abilities.

Carl (2005) contends that the contextual factors, such as the educational system, school culture and the socio-economic factors determine whether the curricular reform initiative is a success or not. The new pedagogies and policies demanded teachers to change their routines (DOE, 2008), and as a consequence the teachers' world was now unfamiliar to them and they had to develop strategies through which to familiarise themselves with new innovations. Another contextual factor that posed challenges was the distance between schools in rural areas. Again, in reference to Zembylas' genealogies of emotions, such factors are important in regard to teacher emotions, eliciting either negative responses of frustration or defeat, or positive responses if they were able to devise potential solutions to these factors. The teachers who participated in this study had difficulty moving from one

school to another; hence they are unable to support each other effectively. They expressed the desire for teachers to be enabled to visit each other's schools and for onsite support to be strengthened.

According to Shulman (1987, 2004) collaboration and reflection are important for effective teacher development activities. The participants stressed that if they are able to watch each other teaching, to conduct lesson observation and thereafter to reflect on areas for improvement as well as on the successes of the teacher, they will be then able to develop themselves as teachers. In support of collaboration amongst teachers, the DBE and HET (2011) recommend that teachers set up Professional Learning Communities (PLC's) to develop their own knowledge and practice standards. As noted above, Zembylas (2002, p. 83) also confirms that social interaction is a fundamental aspect underlying teacher emotions; hence the need for collaboration cannot be over emphasised, if teachers' emotions are to support rather than undermine their teaching efforts and goals.

Figure 1: Nhlanhlo's collage expressing her response to research questions no. 1 and no. 2.



The common emotional experiences that come up from this collage and the other participants' collages are feelings of joy and also frustration. It also comes up that teachers are prepared to engage in a number of activities as depicted in this collage to ensure that teaching becomes a success. One picture shows a man that is running, preparing for a race. When the teacher explained what it meant, he said it represents that teachers read repeatedly until they are ready to teach with confidence. What is interesting is how the

arrows move from the emotional experiences to influence the actions and behaviours. Teachers see themselves as leaders and hence react positively to curricular changes.

4.6.5. The teacher as a scholar and a lifelong learner

According to Zembylas' theoretical framework of the genealogy of emotions, in a school situation teachers have to control their emotions and behave suitably; furthermore teachers have to engage in a struggle to challenge their emotions and to liberate themselves from emotional bondage to negative feelings which are self-perpetuating (Zembylas, 2003b). Similarly, Naidoo (2014) contends that the genealogies of emotions prescribe suitable and unsuitable emotions, and also control and regulate how teachers express their emotions. Zembylas (2002) asserts that the teacher self, the teacher's social interactions, as well as the school culture in general will influence how teachers choose to respond to their emotions.

Whilst Ntobeko, Melissa, Deli and Hlanzeka strongly argued that the Department of Education should take priority in ensuring that their employees, the teachers, be developed; the five teachers also indicated that the individual teacher should take charge of and be responsible for his or her own development. Pinkie, Ntobeko, Nhlanhlo and Melissa affirmed that teachers need to be lifelong learners, and strive at improving their understanding of the knowledge content by studying and by preparing themselves well before they teach learners. According to Shulman's (1987) categories of the knowledge base, content knowledge is one of the key domains that teaching begins with. It provides the basis for teaching. Teachers should have a clear understanding of what is to be learnt and how it should be taught. From the four teachers' responses, it emerged that there were times when they had to teach learners despite not being sure of what they were teaching. It is evident that curricular changes may threaten teachers' content knowledge. This suggests that during periods of change the professional and physical emotional distances of the teachers in terms of their emotional geographies need to be minimised (Hargreaves, 2001) and that teachers' social and contextual realities should be aligned so as to support them emotionally as much as possible (given the impact of teacher emotions on teaching), in order to ensure successful teaching and learning (Zembylas 2002).

When teachers are faced with the challenge of lacking confidence in content and curriculum knowledge, they are also faced with an opportunity for self-transformation or

an opportunity for resisting the implementation of the curricular changes. As Zembylas (2003b, p. 213) contends in his theory of the genealogy of emotions, “emotions are sites of resistance and self-transformation.” From the six teachers who were sampled, four took the opportunity for self-development and found professional support from other teachers and read various materials for self-development. Pinkie commented that a teacher needs to be a lifelong learner who has to find ways to present the content knowledge in the best possible way she can, whilst Ntobeko emphasised that as a teacher one needs to read ahead and always be prepared to teach. Furthermore, Nhlanhlo affirmed this by stating that teachers need to prepare thoroughly before presenting to learners. Instead of waiting for the department to organise workshops, these teachers engaged in self-development activities, by reading more books and studying the concept thoroughly before teaching learners. These coping strategies adopted by the teachers as a result of the emotions that accompanied the uncertainties surrounding the change in the curriculum.

However, Deli and Melissa were of the opinion that the department of education should be responsible for organising developmental activities so that teachers are able to implement the changes with confidence. Deli recommended following the example of the highly organised Zimbabwean education system. Melissa added that *the department should conduct intense workshops* prior to and following implementation of a new curriculum.

4.6.6. Collaboration: “The spirit of togetherness reigns”

From the data gathered from the six participants, it is evident that the confusion that resulted from curricular changes was alleviated when teachers supported each other through holding cluster meetings. During these meetings, the subject advisor would clarify areas of concern. In Ntobeko’s words:

We meet once or twice in a term for moderation and also for supporting each other on topics of concern. During these sessions, teachers will come up with difficult areas or areas of concern and [other] teachers will come up with different strategies for support on how to deal with the concept.

Ntobeko, Hlanzeka and Melissa asserted that the department of education needs to increase opportunities for these support sessions. This is to allow experienced teachers who produce

very good results in their schools to share their expertise with struggling teachers, thus helping these teachers. In the clusters, there are also lead teachers who provide additional support to other teachers by demonstrating lessons. However, it was noted by Ntobeko, (a lead teacher), that some teachers are afraid to come forward and admit that they do not know or understand certain concepts.

Since these schools are situated in a deep rural context, all the six participants alluded that their schools are far away from each other which makes it very difficult to meet as often as they wanted to. This suggests that teachers know the value of sharing information with other teachers and also know how beneficial these sessions are. Nhlanhlo added by saying she would like to have more support sessions where she can watch a teacher teaching a concept that is a challenge to her; and also get a turn to teach and be observed so that challenging areas can be identified and supported.

This kind of approach is what underlies Zembylas' (2002, p. 83) concept of social interactions within his theory of genealogies, which emphasises the ways in which teachers engage with their own emotions through their interactions with others, in this case especially other teachers and stakeholders in the Department of Education. If teachers can turn their feelings of failure or frustration into action (sharing experiences, ideas, expertise and information) to overcome the causes of these feelings (their own lack of confidence and the inadequate performance of their learners), then they have chosen the self-development option instead of the resistance option in regard to their response to the changes they are faced with.

4.6.7 Conclusion

The purpose of this chapter was to describe the lived experiences of the six teachers concerning the way in which they make sense of their emotions as teachers in connection with the curricular changes in Grade 11 Life Sciences. Their stories have also given an insight into how teachers cope and respond to curricular changes. It is evident that though teachers agree with the need to review the curriculum, there are issues that make teachers emotionally uncomfortable with the curricular changes. Drawing from the teachers' narratives one may conclude that teachers struggle with responding to curricular changes. However, they attempted various methods and approaches in order to ensure that they could implement the changes.

A study conducted by Jansen (1997), showed that although the teachers were the implementers of the curricular changes, the support they received was uneven, fragmented or even non-existent in many cases. As a result, teachers experienced feelings of frustration, anger and confusion. Evidence from the data gathered suggested that the teachers pulled their efforts together to ensure that they were able to fulfil their duties. In the process of implementation, such teachers are self-transformed and their professional identity is reconstructed.

In response to the question on what emotions teachers felt in response to curricular changes, two themes emerged. Firstly, the teachers experienced mixed feelings when curricular changes were introduced in Grade 11 Life Sciences. There were feelings of joy in that teachers saw the need for transformation in Grade 11 Life Sciences due to the incoherent themes that did not link up with the Grade 12 curriculum. However, the teachers also experienced feelings of frustration as a result of the manner in which the curricular changes were introduced, and as due to the minimal support that they received in relation to the implementation of the changes. Secondly, feelings that link teaching, performance and teacher identity emerged. Teachers experienced a sense of being failures and had low self-esteem confidence because they were unable to achieve the set outcomes as specified in the curriculum. In responding to the question on how teachers cope and respond when curricular changes are introduced, the teachers noted that they developed a number of strategies (the “bag of tricks”), which they employed in the classroom. Additionally, they formed communities of learning by clustering with other teachers. Some of the participants believe that a teacher has to take charge of his/her own development, although the department should play its role as well.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1. Introduction

The purpose of this discussion chapter is to analyse the data in order to answer the two research questions of this study. The researcher drew on the narratives of six teachers working within six very similar South African school contexts. These schools are located within the deep rural Sisonke Circuit, in the Harry Gwala District. The study aimed to answer the following two research questions:

1. What emotions do Life Sciences Grade 11 teachers experience as a result of curricular reforms?
2. How have Life Sciences Grade 11 teachers coped with and responded to curricular changes?

The researcher employed Hargreaves' conceptual framework of emotional geographies and Zembylas' theoretical framework of the genealogy of emotions to analyse the data.

5.2. Discussion:

5.2.1. What emotions do teachers experience when curricular changes are introduced in Grade 11 Life Sciences?

The data gathered indicates that change was necessary in the Grade 11 Life Sciences curriculum. Keltchermans (2005) contends that changes in education aim at improving the school environment and also at ensuring that the education provided is of good quality; hence the constant curricular reforms. Five of the participants claimed that initially, when curricular changes were introduced, feelings of frustration surfaced. According to the teachers, the main reasons for these negative feelings were the manner in which the changes were introduced; the lack of support; and the shortage of resources. According to Van Veen and Slegers (2006), educational innovations bring with them expectations of how teachers should work and carry out the reform initiatives, but little attention is given to how teachers themselves feel about how they should implement the changes. They further claim that such perceptions can raise strong emotional reactions. Hence "teaching

becomes emotional either by design or by default” (Hargreaves, 2001 p. 1057).

Hargreaves’ (2001) conceptual framework of emotional geographies posits that the patterns of closeness and/or distance in human interactions and relationships produce and shape the feelings and emotions we experience about ourselves, our world and each other. Drawing from the data obtained from the participants, it can be concluded that when teachers were initially unable to teach learners with confidence in the areas where curricular change was introduced, negative feelings were experienced. This could be ascribed to the moral distance that had been created between the teachers themselves and their career duties. The purpose of their teaching was not realised as learners were no longer passing Life Sciences. Positive or negative emotions are triggered by the accomplishment or by the failure to achieve the purpose of teaching (Hargreaves, 2001). According to Sutton and Wheatley (2003) even more experienced teachers become anxious if they feel they are not doing a good job. Melissa, Ntobeko and Nhlanhlo confirmed this, by mentioning that when their learners were not passing, or when they were not mastering the content, feelings of confusion and frustration were experienced. Teachers have a very strong personal and close relationship with their goals in teaching.

By contrast, when the teachers’ purpose is achieved, feelings of joy are experienced. It can therefore be claimed that it is not the curricular change as such that frustrates teachers, but rather the interpretations, the expectations and the effects of the change process that create negative or positive emotional experiences. All the participants acknowledged that Life Sciences had to undergo changes, because all sciences are exposed to new discoveries and new scientific developments, and must develop accordingly. There was however one educator, Hlanzeka, who was trained in CAPS at university and most of the curricular changes that she came across in the school had been covered when she was still a student. Her emotional experiences were therefore not those of frustration or negativity. Instead, she experienced positive emotions and also welcomed the curricular changes. It may be concluded that if teachers are exposed to intense workshops or in-service training programmes, the manner in which they experience curricular reforms may change.

Hargreaves (2001) contends that when teachers feel that their expertise, their knowledge and their judgement about their profession is being questioned, then feelings of frustrations

are experienced. Teachers generally claim that they could provide valuable support to the curriculum reformers if they were allowed an opportunity to be involved at a certain level in the reform initiative (Carl, 2005). The data gathered from all the six participants confirmed that teachers would like to have a stake in the curriculum reform. The top-down approach adopted by the reformers does not create an environment in which teachers can have a voice. Furthermore, it is argued that teachers do not expect to be side-lined in issues pertaining to their profession. They do not want to be seen as mere recipients (Hargreaves, 2001), who are to implement the curriculum in the classroom; they expect their voices to be included and their opinions to be engaged in the initial process of meaningful decision-making (Carl, 2005, p. 228).

Thus, the teachers became angered due to becoming increasingly politically distanced as regards Hargreaves' emotional geographies in that they felt disempowered due to their complete exclusion from decisions about curricular changes, which they were then expected to implement. The physical distance in terms of the emotional geography of teaching should be minimised as teachers require close proximity, frequency and continuity in their interaction. The data collected from the participants indicated that a central cause of the teachers' emotional negativity toward the curricular changes, is the prevalence of physical distance between teachers and the curriculum reformers and subject advisors.

Taking into consideration that teaching is a moral phenomenon, teachers were also frustrated and saddened when they could not achieve the set outcomes and on top of this, there were minimal, if any, opportunities for them to be supported and developed. Their professional distance in regard to their emotional geographies as described by Hargreaves (2001) was increased when their expertise as teachers was questioned and when their content knowledge and teaching method were critiqued. This led to a strong sense of inadequacy and failure. However, the teachers were able to seek help from a number of sources, including the cluster groups, as well as engaging in self-development through engaging in extra reading, preparations and through developing strategies such as group work. This led to the teachers to experience positive emotions as their self-esteem grew and their sense of confidence returned. Teachers became morally close in terms of their emotional geographies when they felt that they were performing their expected duties

successfully.

5.2.2. How have Grade 11 Life Sciences teachers coped with and responded to curricular changes?

Zembylas' (2003b) theory of the genealogy of emotions has been used to explore how teachers cope with and respond to Grade 11 Life Sciences curricular reforms. Zembylas adopts a post-structuralist lens to understand how teachers' emotional experiences affect their teaching, and how they handle and react to changes in the curriculum. Some teachers find ways to develop themselves in responding to changes, whereas others resist change initiatives. According to the theory of the genealogy of emotions, emotions can become sites not only of transformation, but also of resistance. In the above discussion, the researcher has described how teachers had turned their frustrations into opportunities for self-transformation and development. It is important to highlight that in this study not a single teacher resisted the curricular changes, despite the many challenges they faced. They attempted to the best of their abilities to cope with and respond to the reforms by developing a "bag of tricks" and by collaborating with each other. When teachers develop themselves, they are attempting to overcome the feelings of incompetency and powerlessness that have arisen in the teaching process due to the imposition on teachers of new knowledge content and methodologies, without necessarily providing the necessary support and resources.

Furthermore, Zembylas (2002) advocates for emotional control and regulation since it is not always proper for a teacher to show his/her emotions; instead, the teacher should come up with strategies and teaching pedagogies to extend, develop and transform him/herself. The responses given by the teachers who participated in the present study made it clear that they did not want to be seen as failures; they wanted to be seen to be teaching learners with efficacy.

Table 4 summarises the teachers' responses when they were asked about how teachers have coped with and responded to curricular changes in Grade 11 Life Sciences. The teachers gave varied responses to this question. Four participants out of six indicated that they had to develop with strategies in order to understand the changes and enable

themselves to implement them successfully. The teachers expressed great concern about having to teach learners when they themselves were not certain about what they were teaching; hence the theme that emerged from the analysis of the data, the “bag of tricks”. This “bag of tricks” consisted of a number of practices and pedagogies adopted by the teachers, including grouping learners according to their abilities, using debates, employing learner centred methods and presenting differentiated lessons. The complaint arose frequently among the participants in this study that the Department of Education had failed to prepare the teachers for a successful implementation of the curricular changes, in addition to having excluded them from the elementary stages of planning these reforms. Erduran and Msimanga (2014) affirm this by stating that the degree which is supposed to equip South African teachers of the science subjects in South Africa is of questionable relevance and quality.

The teachers in the present study realised that if they were to regain positive feelings toward their work, they had “to sort [through] their experiences, their anxieties, their fears, their excitements and learn how to use them in empowering ways” (Zembylas, 2002, p. 230). As such, they engaged in deliberate and on-going self-development, in particular by engaging in additional reading and studying as well as by ensuring that they were well prepared for a lesson prior to presenting it.

Teachers also coped with and responded to the challenges arising from the curricular changes by creating and increasing opportunities for collaboration among themselves in their subject clusters. Teachers convened meetings where they provided advice and shared experiences regarding how to approach certain topics, set assessment tasks and moderate School Based Assessments (SBAs) etc. They mentored each other, an action strongly supported by Hargreaves (2001). Hargreaves (2001) argues that mentoring reduces the physical distance between the reformers and teachers as well as between the subject teachers themselves. These meetings between teachers encourage collaboration and reflection (Guskey, 2002; Shulman, 1997), allowing for the sharing of resources and ideas as well as improved practice.

However, in the context of the present study, the distance between the curriculum reformers and the teachers was not closed since the latter claimed that they had been

entirely excluded from the reform process and were simply expected to implement the end product. Even the implementation itself was not accompanied by the desired support from subject advisors who were either unavailable or unable to clarify the curriculum changes and how to put them into practice. All the participants stated their wish for onsite support whereby the actual implementation of the changes could be observed in the classroom. Thereafter reflections could take place in support of teachers' further development and transformation. Even on those occasions when meetings were arranged, teachers often found it difficult to attend due to the schools under study being located in a deep rural context, long distances apart from one another. The planned curriculum does not observe the differing contextual limitations under which teachers practice (Naidoo 2012), for example the lack of resources, equipment, transportation and access to support.

5.3. Recommendations

Although this was a small-scale study conducted in a deep rural district of KwaZulu-Natal, the data is potentially of much wider significance as regards the implementation of curricular reforms in the South African schooling system. The study revealed that Grade 11 Life Sciences teachers struggled significantly when curricular changes were introduced and enforced. During and beyond the transition phase, teachers found that they had large gaps in their subject content knowledge. In light of this, the study recommends that it is of critical importance to ensure that the subject advisors are trained and confident with the curricular changes to be introduced, so that they are able to train the teachers with efficiency. Subject advisors must also be present in each district.

The findings of the study further revealed that teachers experience negative emotions when they are uncertain about what they are going to teach. Frykholm (2004) confirms that teachers experience different kinds of discomfort when they are faced with a new curriculum to implement. The present study therefore recommends that teachers, together with the curriculum planners, could devise methods to reduce confusion during the transitional phases, such as follow-up programmes in schools to support teachers whilst teaching and demonstration lessons conducted by the subject advisors or specialists.

Teachers understand that the sciences curricula need to be revised and reviewed continuously due to new discoveries in research and new inventions (DBE, 2011a). As a

consequence, the teachers' practice and content knowledge will change; hence the study additionally recommends that continued professional development support should be made available to teachers. The districts and the Department of Basic Education should open up opportunities for teacher development. Subject teachers and the schools as entities should be encouraged to take more responsibility for their own professional development. This will ensure that the support provided is relevant, on time and continuous since the educators and the schools will be in control of their own destiny.

Hargreaves' concepts of political and professional distance within his framework of emotional geographies of teaching underline the need and desire for teachers to have a voice during the initial stages of the curriculum development process, before the implementation phase (Carl, 2005). Political distance is increased by the teachers' sense of powerlessness, while professional distance grows due to their feelings of inadequacy and failure. The present study therefore recommends that opportunities be opened up for teachers to take an active part in curriculum change in its first phases.

Further, it is the suggestion of this study that a more in-depth research project involving a larger sample extending throughout the province of KwaZulu-Natal should be conducted in order to increase the reliability and transferability of the results of the data collection and analysis. Finally, observation of the workshops that are carried out when a new curriculum is introduced would provide additional valuable data.

5.4. Conclusion

The researcher has highlighted the many different aspects of the emotional experiences of teachers when curricular changes are effected in schools. Emotional experiences that are faced by educators include their mixed emotions ranging from joy and excitement to anger and sadness, as well as their struggles with self-identity as teachers, especially when they felt that they were failing. Despite the challenges they experience, the findings of this study show that teachers employ a multitude of strategies to ensure that successful teaching and learning takes place. These strategies (the "bag of tricks", self-development and the tactic of collaboration) need to be applauded, supported and emulated.

However, it is undeniable that teachers are expected to work under extremely difficult

circumstances, which impact severely on their emotions; in turn significantly affecting teaching and learning itself. Due to the power of their potential results (positive or negative), teacher emotions require further exploration, especially in the South African context, where this field has not been sufficiently examined. This study has highlighted that despite their negative emotional experiences, there are many teachers who continue to teach with purpose, passion and commitment. Teaching remains a moral act infused with a deep sense of duty and a commitment to professionalism.

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APPENDICES

Appendix 1: Summary of responses to research question no. 1.

Deli	Pinkie	Ntobeko	Hlanzeka	Nhlanhlo	Melissa
<ul style="list-style-type: none"> -Difficult to teach -Frustration -Confusion -Lots of work -Not well organized -Wanting to exit the system - Ridiculous - Not happy Uncomfortable - Uncertainty - Not effective 	<ul style="list-style-type: none"> - Confusion - Frustration - Lack enthusiasm - Hate it, don't want it, boring - Irrelevant - Hostility against the subject - Discouraged - Not motivated to teach - Did not know how to teach the concepts introduced - Educators not part of the change in the initial stages. 	<ul style="list-style-type: none"> -Not frustrated by curricular changes due to training and teacher only in CAPS system, hence familiar with CAPS 	<ul style="list-style-type: none"> -Difficult to teach - Frustrating - Confused - Mixed feelings i.e. welcoming change but also unhappy. - Hurts very much when learners fail. - Results reflect poorly on teacher - You did not teach - Joy and satisfaction if learners pass - Failing hurts deeply - Feelings of guilt -Discouraged, - but have to go and teach anyway (helpless) - Losing interest - When feeling good, results likely to be good and vice versa. 	<ul style="list-style-type: none"> -Very frustrated - Thoughts of leaving the job - Started enjoying the reforms as time progressed. - Frustrated by ongoing Life Science curricular changes - Beaten myself up for choice of Life Sciences as my major subject - Changes sudden - Did not like Grade 11 syllabus -Hates animal section - Learners failing -Painful, uncomfortable - Frequency at which change is taking place. 	

Appendix 2: Summary of the responses to research question no. 2.

Deli	Pinkie	Ntobeko	Hlanzeka	Nhlanhlo	Melissa
<ul style="list-style-type: none"> - Using group work - Learner presentations - Learners marking their own work - Learners taking responsibility for their own learning. - Use of learner centred methods - Attending workshops though not effective.- Come out of workshops still not sure and teach though not sure. 	<ul style="list-style-type: none"> - A teacher being a scholar and a lifelong learner- Finding ways to teach a concept - Read ahead and always prepared - Dealing with frustrations before you get into the classroom. - Read more books. - Cluster meetings relieve stress and frustration - Change method of teaching - A teacher is a designer of learning programmes. - Conducting experiments. - Support by the subject advisor - use of learner centered methods, like 	<ul style="list-style-type: none"> -Use different strategies, grouping learners according to abilities - Differentiated lessons - Use of debates - Research methods used - Drilling methods used, also for humanities classes, as well as teacher centered methods - An extra hour of teaching in the afternoons. - Organizing study guides for learners since there are no books - Use of exam bank - Teach learners how to conduct experiments - improvise and bring visuals (pictures) - Putting what 	<ul style="list-style-type: none"> - Finding ways to bridge gaps - Making copies due shortage of books - Extra hours for teaching. 	<ul style="list-style-type: none"> -Grouping learners into small groups - Use of classroom rules - Use of HoD support - More time for preparation. - Learners conducting experiments. - Using documents for guidance. - Providing copies for learners to see structures, due to lack of books - Intense preparation and planning - Meetings during workshops and moderations 	<ul style="list-style-type: none"> -Use of group work. - Learners making presentations (learner centered methods) - Hold extra classes - Use of overhead projector(increase contact time) - Change approach to teaching so that learner performance improved - Prepare learners in Grade 10 for Grade 12. - Approaching other teachers for support - Reading documents - Organize more support material - Support from neighboring schools - Extra classes - Networking with relevant people - Studying the concept before teaching it - Moderations done

	<p>hands on techniques, research and presentations</p> <ul style="list-style-type: none"> - Support by other teachers - Additional hours for teaching. 	<p>is taught into practice</p> <ul style="list-style-type: none"> - Applying content taught to everyday life situations - Support from the cluster - Setting assessment tasks together, sharing how to teach a concept - Intense preparation. 			<p>in clusters.</p>
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