Research report for a Masters Degree in Education

Perceptions and experiences of primary school teachers in teaching critical thinking in Grade 6 Social Sciences.

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DECLARATION

I declare that this research report is my own work completed under the guidance and supervision of Bronwen Wilson-Thomson. It is being submitted for the degree of Master of Education at the University of the Witwatersrand. It has not been submitted before for any degree or examination in any other university.

_____ August, 2020

Mudau Edwin

LIST OF ACRONYMS

CAPS	Curriculum and Assessment Policy Statement
DBE	Department of Basic Education
FET	Further Education and Training Band
GET	General Education and Training Band
HOD	Head of Department
IP	Intermediate Phase
ISPFTEDSA	Integrated Strategic Planning Framework for Teacher Education and Development in South Africa
NDP	National Development Plan
NPC	National Planning Commission
NSC	National Senior Certificate
OBE	Outcomes Based Education
RNCS	Revised National Curriculum Statement
SACMEQ	Southern and Eastern Africa Consortium for Monitoring Educational Quality
SMT	School Management Team
SS	Social Sciences
UNICEF	United Nations Children's Fund
USDE	United States Department of Education

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

The purpose of this study was to explore primary school teachers' perceptions and experiences in teaching critical thinking in grade six Social Sciences. In its aims, the Curriculum and Assessment Policy Statement (CAPS) indicates that teachers in the Intermediate Phase must engage learners in critical thinking.

This study comprised of three participants drawn from three purposively selected schools: one township, one independent and one former model C school. All the primary schools are located in the Gauteng Province of the Republic of South Africa. All participants had been teaching Social Sciences for more than three years. This study was based on a qualitative research approach and a case study design was employed. Data collection was done through conducting semi-structured interviews and analysis of formal assessment tasks set by the participants for summative assessment purposes. The analysis of data followed a thematic analysis approach. The Revised Bloom's Taxonomy was used as an instrument to evaluate the teaching of critical thinking by participants.

The findings indicated that the teaching and assessment were biased towards low order cognitive skills. Teachers were not teaching for critical thinking and that there was no deliberate focus on the teaching of critical thinking in primary schools by both teachers and school management teams. Teachers did not include high-level cognitive ability questions in their assessments and as a result, the marks recorded did not reflect high-quality learning, implications include that performance analysis of primary schools needs to be reviewed to prioritise quality teaching and learning.

Finally, this study recommended that district offices develop a framework for tracking the teaching of critical thinking.

Keywords: critical thinking, subject-specific, generic skill approach, integration, historical thinking, geographical thinking, powerful knowledge.

TABLE OF CONTENTS

Table of Contents

CHAPTER ONE: INTRODUCTION

The demand for quality education is a fundamental human capital, human rights-based and social justice phenomenon with historical, political, social and economic value particularly in societies that are characterised by the deepening gaps of inequality between the rich and poor, within and across countries. This demand is contested ideologically by scholars, researchers, policymakers and a broad range of stakeholders to determine educational objectives and curriculum type most able to improve the livelihood of both individuals and society at large.

This study explored critical thinking as an element of quality education which is mainly articulated and shaped through the curriculum policy statement, whose intention is to present to all interested parties what policy makers envisage for the citizens. To highlight the link between societal needs and curriculum, Luke, Woods and Weir (2013, p.26) argue that:

> *The generic skills for the new economy argument have had an impact on the technical form of the curriculum. Specifically, most systems now list in their official curriculum or syllabus documents these new skills for cross-curricular integration into teaching and learning. Yet their impacts on the enacted curriculum in specific subject areas have not been substantiated or documented.*

The South African curriculum placed an emphasis on critical thinking in all the subjects in the Intermediate Phase (Grades 4-6) - (IP). In other words, the demand for quality education is underscored most importantly by the paradigm shift towards the realisation of critical thinking as an aim of education and a tool to engage fruitfully, efficaciously and solve problems by citizens both young and old in an ever-changing global society (National Planning Commission, 2011). In advancing the importance of critical thinking, the Department of Basic Education (DBE) in South Africa advocated for critical thinking as an aim of education and a child-centered curriculum through the promulgation of the Curriculum and Assessment Policy Statement (CAPS, 2011) in all the subjects in the IP.

As teachers are central to curriculum delivery in schools, it is important to explore what they think critical thinking could be in Social Sciences. In this study, the focus was on teachers' perceptions and experiences of teaching critical thinking in grade six Social

Sciences which is located in the IP of the General Education and Training (GET) band of the DBE.

This study recognises that although government and education policy reflects critical thinking as an overarching aim of the Social Sciences curriculum, there is little attention paid to its teaching and learning in primary schools. Furthermore, the study argues that the teaching of Social Sciences in the IP has been neglected. The neglect is evident through the funding of teacher development programmes which prioritises mainly English First Additional Language and Mathematics in the IP. Such bias affects the holistic enhancement and development of critical thinking in primary schools. I embarked on this study to gain insights into Social Sciences teachers' perceptions and experiences of teaching critical thinking in grade six.

Social Sciences as a subject and the teaching and assessment of critical thinking have endured neglect in the IP. The position of this study is that critical thinking is subject-specific and as such all teachers need support in teaching it across every subject. Such support should enable teachers to reflect on their teaching and assessment practices.

As a teacher and a researcher, I am interested in understanding the teaching and assessment of critical thinking in Social Sciences. I regard the subject as an essential subject in the education system. The narrow focus on Mathematics and English is short-sighted and therefore, undermines the holistic development of learners across all subjects. The lack of exposure of teachers and learners to critical thinking in primary schools and in particular in Social Sciences deprives them of the benefits of geographical thinking and historical thinking. The foundations for teaching critical thinking in primary schools are weak.

My motivation of promoting and advocating for critical thinking as an element of quality education in Social Sciences is grounded in the assertion of Lewis and Smith (1993) that social studies teachers should expose and also help learners to develop critical thinking skills that will enable them to evaluate, generalize and hypothesize. If the quality of education, that is critical thinking, is to be improved, there is a need to focus on teachers and their practices. Hence, it was important to explore the quality of critical thinking teaching and assessment in grade six Social Sciences.

Literature has shown that various education stakeholders view quality education as a catalyst in fostering the self-actualizing of the citizenry. Quality education is necessary because it empowers learners with knowledge, life skills, creative and cognitive capabilities (United Nations General Assembly, 2013). Unsurprisingly, due to South Africa's poor performance against most African countries[1] surely the classroom needs to become the focal point of the quality discourse. This shift is fundamental as many studies available in the public domain focus on learners' performance in standardized tests, and not on classroom practice that promotes critical thinking. Even so, such studies focus mainly on Maths and Science, to the exclusion of Social Sciences. This study does not focus on learners' performance in Social Sciences assessments, instead; it focuses on learners' learning in respect of critical thinking which is content-dependent. Furthermore, the literature reveals that teachers' instructional practices have a direct bearing on the quality of education in the sense that, it is a direct indicator of the quality of the learning process (Barber & Mourshed, 2007). There is an unprecedented call for pedagogy to take center-stage in quality education discourse (Alexander, 2008, 2015; UNICEF, 2000).

Moreover, many experts and global agencies[2] concerned with the monitoring and evaluation of quality education define quality education by either characterising high performing education systems around the world or by explaining its purposes. In doing so, it is clear that such a definition reflects an orientation derived from the three dominant approaches to quality education, namely; human capital, human rights-based and social justice approaches. For Barber and Mourshed (2007), there are three things that high performing education systems do. First, they get the right people to become teachers because the quality of an education system cannot exceed the quality of its teachers. Second, they develop these people into effective instructors saying that, the only way to improve outcomes is to improve instruction. Third, they put systems in place to ensure that every child can benefit from excellent instruction; by stating that the only way for the system to reach the highest performance is to raise the standard of every student.

1 in surveys such as the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ), that is SACMEQ II, SACMEQ III, SACMEQ IV and the Trends in International Mathematics and Science Study (TIMSS),

2 such as Organisation for Economic Co-operation and Development and Mc Kinsey & Company

Given the significance of the teaching of critical thinking in Social Sciences in the IP, I deemed it prudent to focus this case study on teachers since they are the major determining factor of quality education. The case study was conducted in three primary schools and involved three teachers each from the three categories respectively. The data collection process was premised on qualitative methodology. Interviews were used to explore teachers' perceptions and experiences in teaching critical thinking in the Social Sciences disciplines, whilst analysis of formal assessment tasks was done through the employ of the taxonomy table (Anderson et al., 2001).

As teachers determine the quality of what takes place during the teaching and learning process of Social Sciences disciplines (Geography and History), they need a framework to do so. Teachers should be guided by the Social Sciences subject policy since it spells out knowledge and skills that learners are expected to demonstrate in the learning process; and prescribes and illustrates the specific and general aims of the curriculum. When one wants to implement critical thinking as an educational goal, a well-defined scheme for its assessment is required (Bissell & Lemons, 2006). This study adopted the revised Bloom's Taxonomy of Educational Objectives (Anderson, Krathwohl, Airasian, Cruikshank, Mayer, Pintrich, Raths & Wittrock, 2001) to analyse the extent to which instruction and assessments enhance and promote critical thinking in Social Sciences. The use of the taxonomy table may impact the quality of education in Social Sciences in respect of critical thinking as it aligns content knowledge, skills and assessment tasks.

Analysis and interpretation of data gathered in this study revealed that for Social Sciences teachers to promote critical thinking, they should also demonstrate disciplinary knowledge of the subject they teach to identify the inherent opportunities created by the curriculum for teaching critical thinking. Furthermore, analysis and interpretation of data in the study indicated that although participants had a partial understanding of relevant teaching strategies to develop critical thinking in learners, their assessment strategies in the form of formal assessment tasks revealed a heavily skewed alignment toward lower-order thinking skills which was two times higher than the prescribed weighting of cognitive skills in the Social Sciences (CAPS, 2011) policy.

1.1 BACKGROUND TO THE STUDY

This study was prompted by my experience as a subject advisor in Social Sciences in the IP during the period from 2018 to 2019. One aspect of my job description[3] is to support teachers in enhancing their content knowledge, to facilitate, organise in-service workshops and conduct training sessions. I provide guidance and support through structures and systems which include on-site support visits to Social Sciences teachers (IP) in primary schools.

There are also expectations on the side of teachers that I support. The post-apartheid legislation[4] identified new roles for the teachers which include learning mediator, assessor, and subject specialist which are expected to produce learners who participate actively in the learning process (Msila, 2007).

This study was also prompted by calls made by DBE[5] and international interest groups such as the United Nations Children's Fund (UNICEF, 2000) to intensify teacher training and development to improve the quality of education. UNICEF reminds us that teacher support programmes should empower teachers to develop teaching strategies that recognise new understandings of how learners learn. Like the curriculum, teaching approaches should be child-centered as well. Teachers should realise that the view of teaching as knowledge presentation is out-dated and does not fit with current learning theories. Teaching approaches should enable learners to build on prior knowledge to enhance cognitive skills and their knowledge base. To support teachers effectively, one should first understand teachers' perceptions and experiences in teaching critical thinking in Social Sciences. A plethora of DBE policies recognise the importance of in-service teacher development through relevant support strategies. The National Development Plan (NDP, 2012) and the Action Plan to 2019[6] envisage that to deliver quality education, teacher development must focus on improving teachers' content knowledge and appropriate teaching strategies.

[3]Collective agreement No.4 of 2017: contains job description for office based educators.

[4] The Employment of Educators Act, 1998: determines the roles and responsibilities of teachers.

[5] The Integrated Strategic Planning Framework for Teacher Education and Development in South Africa.

[6] Action Plan to 2019: Towards the Realisation of Schooling 2030. It is the sector plan for the DBE which addresses strategies to address priorities and targets outlined in the National Development Plan.

My interaction with IP subject teachers coupled with observation in learners' books during school support visits revealed that teachers struggle to teach Social Sciences content. Learners demonstrated little understanding and comprehension of concepts in both informal and formal assessments. The teaching and assessment of Social Sciences are not consistent with the views expressed earlier by the DBE and UNICEF (2000). Furthermore, learners' work is characterised by note-taking, particularly definitions from textbooks and closed-ended activities mainly in the form of gaps fill tasks that do not call for critical thinking. This suggested that teachers may not be teaching in a manner that encourages critical thinking. My observation is supported by Seixas and Peck (2004) who assert that the teaching of History is dominated by the teaching of facts without allowing learners to make sense of what they are learning. The teaching of Social Sciences must be congruent with its curriculum and assessment.

In a nutshell, the critical aspects of teaching and assessing geographical knowledge and historical knowledge as I observed in learners' books do not promote geographical thinking and historical thinking. It appears that in teaching and assessment of the Social Sciences disciplines, teachers are struggling to align the aims, content and assessment tasks to promote critical thinking.

1.2 THE RATIONALE FOR THE STUDY/PURPOSE OF THE STUDY

This study is intended to help teachers develop or select appropriate strategies, activities, and resources informed by context and the needs of learners in promoting and enhancing the teaching of critical thinking. In support meetings, Social Sciences teachers are aware of cognitive levels, either Bloom's taxonomy or Barrett's levels, but the moderation processes suggest that teachers and learners have difficulty with items demanding critical thinking. In this study, I seek to explore how teachers understand critical thinking in Social Sciences and the extent to which they create an environment for critical engagement in teaching, learning, and assessment.

1.3 THE AIM OF THE STUDY

The main aim of this study was to explore teachers' perceptions and experiences of teaching critical thinking. The study will assist teachers in ensuring that critical thinking is addressed both during teaching and assessment contexts in grade six Social Sciences in a manner that matches the stipulated skills and knowledge of each discipline.

This study argued for subject-specific instructional and assessment practices in Social Sciences which promote critical thinking, thereby enabling learners to engage with factual, conceptual and procedural knowledge. In doing so, I'm mindful of the long-standing contestation between two schools of thought, one being the proponents of traditional instruction mainly represented by drill tasks and, teacher-driven, and the other being constructivist and learner-centered. I'm also mindful of the US Department of Education's Mathematics Advisory Panel's (2008) assertion that there is no scientific evidence that supports recommendations suggesting instruction in teaching and learning should be exclusively either be learner-centered or teacher-centered. Research does not advocate for the exclusive use of any of the two approaches.

Nevertheless, this study is justified by firstly; the stipulated purposes, principles and aims of CAPS (2011) which I believe are compatible and have a constructivism orientation. Among its principles, Social Sciences (CAPS, 2011, p.4) advocates for "an active and critical approach to learning, rather than rote and uncritical learning of given truths". Secondly, the norms and standards for educators[7] envisage teachers as mediators of learning, assessors and subject specialists. This view is also congruent with learner-centeredness and constructivism, as it claims that learners create their own meanings. The role of the teacher is to create an environment for critical engagement. Both the NDP and the Action Plan to 2019 require district offices to provide support which will improve teaching methods. As a subject advisor, I hope to provide informed support to teachers to foster critical thinking.

The objective of my study can be summarized as firstly; to investigate and understand teachers' perceptions and experiences of critical thinking. Secondly; to examine the

[7] Norms and standards are outlined in the National Education Policy Act 27 of 1996, stipulating the roles of educators.

factors which lead to teachers' selection of particular instructional and assessment strategies. Lastly; is to investigate the extent of the use of critical thinking questions or instructions in teachers' formal assessment tasks. For this research, I will focus on grade six History and Geography disciplines in the subject of Social Sciences.

1.4 PROBLEM STATEMENT

In the South African context, studies have shown that irrespective of the grade nor the subject learners could be tested on, their performance is significantly lower than what the prescribed curriculum envisaged (Spaull, 2013). Moreover, various research reports, national and international have concluded that many learners have access to education, yet are still struggling with basic literacy and numeracy.

There is a lack of literature regarding the teaching and learning of critical thinking in grade six Social Sciences. In other words, there is a lack of data illuminating teachers' instruction and assessment of critical thinking in the subject disciplines. Given the progressive nature of the Social Sciences curriculum (CAPS), the data available that may come close to illuminate the challenges around critical thinking is the National Senior Certificate (NSC) examination (an example of standardized tests in South Africa). Amongst the challenges noted by the NSC Diagnostic report 2016[8], in Geography performance was that candidates struggled to define basic geographical concepts. Candidates had difficulty in answering questions that required a higher-level of thinking such as evaluate, account for, discuss, describe and explain. Concerning History, the NSC Diagnostic report (2016) noted that students were weak at paragraph writing and were unable to take a stance and defend it logically.

Given that the findings for Geography and History were in the higher grades (grade 12) one could infer that learners in primary school level are also struggling to answer higher-order questions. I focused on these subjects because they constitute what is called Social Sciences in the IP, which is the focal point of this study. My work experience has revealed that it is hard to come across data that illuminates teachers' perceptions and experiences of critical thinking in the IP. There is also a lack of data

[8] NSC, Diagnostic report 2016: After the administration of Grade 12 examination each year, the department of Basic Education releases diagnostic reports illuminating performance trends and diagnostic question analysis.

reflecting teachers' instructional and assessment practices in respect of the teaching of critical thinking. The teaching of critical thinking does not receive attention in the subject.

If we were to improve critical thinking as an aspect of quality education, given the challenges of poor performance in Geography and History in the NSC results going forward, it would be important that a strong foundation for the teaching of critical thinking in the subjects is laid in Social Sciences in the IP. Exploring teachers' instructional and assessment practices may be the first crucial step.

1.5 RESEARCH QUESTIONS

The critical research question in the study is:

What are teachers' perceptions and experiences of teaching critical thinking?

The empirical sub-questions are:

1. How do grade six teachers understand critical thinking in Social Sciences?
2. How do teachers' understandings of critical thinking influence their pedagogical/instructional and assessment choices in Social Sciences?

This chapter reflected on the overarching approaches to quality education and demonstrated how education goals and targets of international agencies and the DBE prioritize the demand for quality education. Critical thinking was discussed as an element of quality education and an overarching aim. The teaching of critical thinking must be viewed as a subject-specific approach. The chapter highlighted the need for empirical evidence-based support for promoting the teaching of critical thinking in Social Sciences. Understanding the perceptions and experiences of Social Sciences teachers in the teaching and assessment of critical thinking will assist in supporting teachers.

CHAPTER TWO: LITERATURE REVIEW

Reviewing relevant literature provides the researcher with a point of reference which is important for analysing research findings (Merriam, 1984). This chapter presents a relevant literature review to frame an exploration of teachers' perceptions and experiences of teaching critical thinking in grade six Social Sciences.

This chapter firstly explores debates about how critical thinking is conceptualized: as a subject-specific or generic skill and whether critical thinking is appropriate for primary school learners. Secondly, the chapter explores curriculum design and development in post-apartheid South Africa and how the integration of History and Geography in Social Sciences pose unintended consequences in teaching critical thinking. Similarly, the chapter explores how advocating for 'pedagogical integration' (Kgari-Masondo, 2017) affects the use of 'powerful knowledge' (Rusznyak, 2017) in the Social Sciences disciplines. Furthermore, the chapter explores whether CAPS (2011) provides opportunities for the teaching of critical thinking in the Social Sciences disciplines. Finally, the taxonomy table of the Revised Bloom's taxonomy (2001) is discussed as a tool for enhancing and promoting the teaching and assessment of critical thinking in grade six Social Sciences.

The significance of critical thinking is widely reported and emphasised in curriculum documents of many countries (Case, 2005, Rose, 2005). In this study, the significance of teaching critical thinking is best summed by the concepts of human capital, human rights-based and social justice[9]. Some of the debates about the significance of critical thinking usually address one of the approaches at the expense of the other two. A striking example is that of Hunt (as cited in Halpern, 1998, p.450) who asserts that as the number of jobs in manufacturing shrinks amid stiff competition, there is an increased demand for cognitive skilled workers who can undertake multiple operations as well as engaging in abstract thinking. Such a worker is dubbed 'the knowledge worker'. The social justice approach was viewed as the encompassing concept of the

[9] According to Tikly and Barret (2009), the human capital approach rationale is that the quality of education may improve economic growth. The human rights approach emphasizes rights to education, whilst the social justice approach is based on the concepts of 'redistribution, recognition and participation'.

other two and therefore, adopted in this study since it encompasses the rationale of the other two approaches.

To keep up with the ever-changing demands imposed mainly by market demands and human rights and freedoms, the South African Constitution[10] spells out the need to redress the socio-economic imbalances of the past, of which quality education is just one. As it has widely been debated by experts, the apartheid education system reflected a country that was fragmented and which never produced critical thinking and conscientious citizens (Msila, 2007).

The significance of critical thinking in the IP subjects, including Social Sciences is expressed in the curriculum policy document through critical outcomes. Critical outcomes are defined as generic and cross-curricular (Msila, 2007). Critical outcomes aim to develop in learners the knowledge and skills required for them to function meaningfully in a democratic country. The Revised National Curriculum Statement for Social Sciences states that; “Learners must be able to identify and solve problems and make decisions using critical and creative thinking” and that “Learners must be able to collect, analyse, organize and critically evaluate information” (DoE, 2002, p.1). The critical outcomes under CAPS are indicated as the general aims of the South African curriculum (CAPS, 2011).

After highlighting the significance of critical thinking in the curriculum discourses in South Africa since the advent of democracy in 1994, it is important to ascertain how various experts and theorists define or characterise the concept critical thinking in the next section.

2.1 CONTESTED NOTIONS OF CRITICAL THINKING

There is consensus that critical thinking is central to educational reform as a progressive aim of education nationally and internationally and that it is a necessary skill for the 21st century both in school, university and public life (Gelerstein,

[10] The Constitution of the Republic of South Africa, 1996: as adopted on 8 May 1996 and amended on 11 October 1996 by the Constitutional Assembly.

Nussbaum, Chiuminatto & Lopez, 2016; Halpern, 1998; Halpern, 2001; Ku, 2009; Mulnix, 2010; van Gelder, 2005; Willingham, 2008).

The concept of critical thinking is fraught with contestation which is evident in the plethora of definitions and characterisations posited by various theorists. Bissell and Lemons (2006) identify two impediments in the assimilation of pedagogical strategies that enhance critical thinking skills, namely; definition of critical thinking and measuring critical thinking itself. It was essential to narrow the definition and characterisation to a few theorists in this study. The theorists cited in this study are regarded as authoritative voices in the subject of critical thinking.

Although there is consensus about the role of critical thinking there are contestations about approaches to teaching critical thinking. It is clear that the discourses are never meant to refute the role of critical thinking but they are contestations about the approach to teaching critical thinking. One school of thought supports the 'subject-specific approach (Bailin, Case, Coombs & Daniels, 1999b; Willingham, 2008), whilst the other school of thought, supports the 'generic skill approach (Halpern, 1998). The former group posits that critical thinking skills are dependent on the subject matter and therefore the skills are not easily transferable across other subjects. The latter group of theorists posits that critical thinking must be viewed as a separate course where critical thinking skills are addressed outside the subject matter of any specific subject. This study is located within the subject-specific approach of teaching critical thinking and argues for the teaching of critical thinking in Social Sciences. It is the view of this study that by encouraging the teaching of critical thinking in every subject particularly in the IP, CAPS (2011) tends to support the subject-specific view of critical thinking.

Some theorists and educationists refer to critical thinking skills as higher-order cognitive skills (Halpern, 1998; Halpern, 2001; Willingham, 2008), thereby distinguishing them from lower-order thinking skills. On the one hand, philosophers prefer to call it critical thinking while on the other hand, some psychologists prefer to call it 'thinking skills'. This contestation has resulted in theorists and educationists calling critical thinking a 'conceptual swamp' (Lewis & Smith, 1993).

Case (2005) and van Gelder (2005) observe that although every curriculum statement acknowledges the significance of critical thinking, the extent and manner of teaching and assessing for critical thinking remains elusive in our schools. For van Gelder

(2005), the fundamental questions we should answer remain: in what ways could that be done and also; what support may strongly promote critical thinking skills? This study envisages that the data collected by interviewing teachers and analysing their formal assessment tasks may contribute to understanding issues in our context. For Halpern (1998, p.450), critical thinking refers to the use of cognitive skills or strategies that increase the chance of a desirable outcome and should be viewed as 'purposeful, reasoned, and goal-directed'. Critical thinking involves problem-solving, formulation of inferences as well as decision-making. Appropriate instruction can help improve the thinking abilities of students and such activities include exposure to 'real- world, out-of-the classroom situations'.

On the other hand, critical thinking consists of:

> *seeing both sides of an issue, being open to new evidence that disconfirms one's ideas, reasoning dispassionately, demanding that claims be backed by evidence, deducing and inferring conclusions from available facts and solving problems* (Willingham, 2008, p.21).

Willingham (2008) argues further that the process of thinking is subject-specific because a learner may be able to think critically in one context, but not in another context as thinking is what the learner is thinking about. Critical thinking is not a set of skills that one can deploy at any given time and therefore, in any given context.

Teachers are critical agents for the teaching of critical thinking in schools. Barak et al. (2007); Halpern (1998); Mulnix (2010); van Gelder (2005); Willingham (2008) emphasise the importance of 'practice' to improve critical thinking. The overarching theme in the literature is that classroom activities must be directed to enable critical thinking in which learners participate actively in the learning process. For Mulnix (2010) to enhance critical thinking, curriculum objectives must carefully design its assessment tasks or activities in a manner that reinforces and repeats the skills of reasoning throughout the learning process. Similarly, van Gelder (2005) argues that unless the students are actively thinking themselves, they will never improve. Barak, Ben- Chaim, and Zoller (2007) assert that teachers must purposely practice higher-order thinking strategies such as dealing in class with real-world problems. Bailin et al.

(1999a) argues further that practice involves more than mere repetition in the teaching and learning of critical thinking.

After exploring the contested notions of critical thinking by some notable theorists it is crucial to highlight the background of the concept of critical thinking.

2.2 CRITICAL THINKING

Gecit and Akarsu (2017) trace the origin of the concept of critical thinking to the Greek term 'Kritikos', which denotes the meanings of 'evaluation, judgment and identification'. Similarly, Duron, Limbach, and Waugh (2006) argue that critical thinking occurs when learners are required to perform in the category of analysis, synthesis and the evaluation levels as reflected on the Bloom's taxonomy of cognitive skills. They posit that critical thinking as a concept has developed over the years starting from ancient Greek philosophers, Socrates, Plato and Aristotle.

Theorists such as Barak et al. (2007), Choy and Cheah (2009), Duron et al. (2006), Lai (2011) and Lipman (2003) show that critical thinking in education was first highlighted by Bloom's taxonomy (1956). According to Lipman (2003), the critical thinking movement was born out of the concept of cognitive skills. Accordingly, in the 1950s educational practices were influenced by 'behavioural objectives' in the classroom. Bloom and his colleagues introduced the concept of 'cognitive objectives' to assist the achievement of the objectives.

Duron et al. (2006) posit that although thinking is a natural process, critical thinking must be taught. This would imply that teaching strategies have a bearing in the learning of critical thinking. How content is presented to learners will affect their ability to think critically. Duron et al. (2006) remind us that teachers should provide opportunities for students to engage in the upper levels of Bloom's taxonomy where critical thinking takes place. Whilst most teachers believe that developing critical thinking is fundamental, it would appear that they have little idea of what it is, how it should be taught, or how it should be assessed. If critical thinking is left unattended, it may turn to be distorted and biased.

My experience and observation as a Social Sciences subject advisor in primary schools made me conclude that teachers struggle with teaching for critical thinking.

This conclusion was backed by the evidence of learners' activities characterised by note-taking and gaps fill tasks. My experience and observation are consistent with the literature cited in this study. However, I was not sure about teachers' perceptions and experiences of teaching critical thinking in primary schools. Literature reveals that there is a misconception around the teaching of critical thinking mainly emanating from the introduction of Bloom's taxonomy relating to the learning theories as well as the appropriate time for the introduction of critical thinking in the education system. Lipman (2003) argues that the context to which Bloom's ideas were discarded was that of 'Piagetianism', a dominant force in child psychology from the 1930s through the 1970s. Accordingly, Piaget has maintained that young children's thinking was 'concrete, perceptual and affective', and that could not think clearly by using abstract ideas. The aim of education was viewed to be "a matter of getting time to shuck off their childish ways of thinking and acquiesce in the truth" (Lipman, 2003, p.40). Proponents of this view believed that it should only be until late high school or beyond before learners could be expected to engage in critical thinking. It is important to highlight that the misconception that learners should only be expected to engage in critical thinking beyond primary education is inconsistent with CAPS (2011). CAPS (2011) policy is the guiding document of this study and it envisages the teaching of critical thinking as early as in the IP and in all subjects.

Lipman (2003) further notes that when Bloom's concepts were reconciled with Piaget's work and the hierarchy were to be construed as a theory of developmental stages, consequently, children's concrete thought process in their early years were viewed to only allow them to perform merely memory activities. It was consequently conceived that children would only be able to perform complex activities later in adult life. Consequently, these assumptions and misconceptions precluded the teaching of critical thinking to young learners and many teachers maintained that children or learners were not capable of giving reasons for their opinions.

Lai (2011) makes similar observations to those of Lipman (2003) and indicates that the proponents of the 'Piagetian tradition' consider young children's cognitive processes to be deficient as compared to older people. Therefore, Piaget's stages of cognitive development were interpreted by the followers of 'Piagetian tradition' to mean that young children are incapable of abstract reasoning which is a significant aspect for critical thinking.

According to Lipman (2003), the back to basics movement of the 1970s in the United States of America was considered to have provided teachers with an opportunity to revisit their assumptions and misconceptions about the teaching of critical thinking. Since the inception of the back to basics movement, there have been many research findings to justify the teaching of critical thinking in lower school levels.

There has also been a challenge in teaching and assessing critical thinking using the original Bloom's taxonomy. Only in 2001 when Anderson and Krathwohl published a version of the taxonomy based on research findings, was it accepted that most of the skills can be employed simultaneously or without any particular order. Silva (2008) notes that the new taxonomy was different since the old taxonomy stated that one cannot apply until one can comprehend, or that one must understand before one can analyze. Research rebutted such claims and assumptions and concluded on the contrary, there is no set age or developmental stage at which learners gain higher-order thinking skills. Research findings maintained that knowledge and thinking should be combined across grades.

Studies by Bailin et al. (1999b) and Gelerstein et al. (2016) reveal significant differences between learners that were exposed to critical thinking and those that were not, and conclude that the best time to teach critical thinking is during the first years of primary education. Bailin et al. further note that teaching learners to assess arguments based on evidence in subjects such as Chemistry and History may have to wait until learners are at high school level. However, teachers need to introduce primary school learners to learn the important habits of mind which are fundamental to critical thinking, namely; 'providing reasons, respecting others in debates and discussions, open-mindedness and viewing issues from other learners' different viewpoints' (Bailin et al., 1999b).

According to Case (2005), the reason why critical thinking is not getting attention is that sometimes thinking skills are separated from subject content in the teaching and learning processes. This implies that the teaching of critical thinking is generally separated from the teaching of subject knowledge. Curriculum content becomes the main priority for teachers. Therefore, thinking skills are addressed only after the subject knowledge has been taught to learners often only at the end of the topic, are learners allowed to reflect on what they have learned. Owing to the heavy workload

and the content focus of standardized assessments, some teachers find themselves with little time to engage learners in thinking about the prescribed grade content. Even when critical thinking is addressed in classrooms, it is mainly separated from the subject matter and taught as a generic skill that learners are envisaged to apply to their schooling.

As a solution for the challenges emanating from the assumptions and misconceptions of teaching critical thinking, Case (2005) distinguishes two features required for enhancing and promoting critical thinking, namely; curriculum-embedded approach and teaching the intellectual tools. The curriculum-embedded approach disputes the notion that critical thinking is a generic set of skills that can be enhanced separate from the content and context of the subject. For Case (2005), if critical thinking is to be central to the curriculum, it must, therefore, be viewed as a means of teaching the very curriculum. Content and thinking processes should not be viewed as separate entities. As he puts it,

> "*thinking without content is vacuous and content acquired without thought is mindless and inert"* (Case, 2005, p.47).

According to Case (2005), the role of teachers is to engage students in critical thinking and move away from the recall of content towards an approach of problematizing the prescribed content. Teachers experience frustration when teaching critical thinking as learners lack the required tools to engage in critical thinking, namely; 'concepts, attitudes, knowledge and strategies' (Case, 2005). Without the required tools, they will not be able to engage effectively in critical thinking. For learners to be successful, they should be taught the requisite tools for critical thinking in dealing with activities or the learning task at hand.

This study argues that for teachers to have a visual representation of the alignment of critical thinking skills aligned to the prescribed content in the grade, they need a framework to do so, in the form of Bloom's revised taxonomy.

Ways in which various experts and theorists define or characterise the concept of critical thinking are discussed in the next section.

2.3 TEACHING FOR CRITICAL THINKING

Several obstacles to the improvement of critical thinking in schools mainly relate to disagreements over the preferred educational approaches towards the teaching of critical thinking (Lipman, 2003). The first relates to the claim that all thinking is discipline-specific, against the claim that there are generic thinking skills that overarch the disciplines. The second involves an attempt to make the separate disciplines more reflective by adding critical thinking exercises to each chapter of their curricula, against incorporating all cognitive exercises in an autonomous course in critical thinking. The third relates to an attempt to teach critical thinking by teaching about it, against an attempt to teach critical thinking by stressing practice rather than theory. This approach puts the acquisition of cognitive skills on the teacher and assumes that they will rub off on the learners, against approaches in which the teacher provides learners with curricular models of thinking to support the teacher's modeling.

The identified contestations could hinder the teaching of critical thinking in schools if not addressed appropriately. Despite the challenges, and given the fact that critical thinking is generally accepted as an aim of education, it is important to explore how the concept of critical thinking relates to the subject disciplines of Social Sciences. This study seeks to explore whether teachers are aware of the opportunities inherent in the Social Sciences disciplines and to investigate teachers' experiences of critical thinking in Social Sciences.

2.4 A BRIEF HISTORY OF CURRICULUM DESIGN AND DEVELOPMENT

There is a consensus that curriculum design and development is a complex and contested process (Atkin, 1999; Chisholm, 2005; Iyer, 2018; Le Grange & Beets, 2005; Luke et al., 2013; Msila, 2007). The curriculum represents the aspirations of a nation. Unsurprisingly, its design and implementation are continuously interrogated by various interest groups. Literature reveals that in times of social and economic challenges, curriculum documents and teachers are held responsible for the general quality of education and the schooling outcomes, hence continued reviews and revisions, as evident in South Africa. As Msila (2007, p.146) posits, 'education is not a neutral act; it is always political'.

Contestations on curriculum design and development assist us to understand factors that shaped the South African curriculum since the democratic dispensation. Luke et al. argue:

> *The history of curriculum is written as a debate over content. Whether we construe that content in terms of dominant ideologies, available discourses, disciplinary and knowledge paradigms or cultural narratives and values- at any historical moment, the process of teaching a curriculum settlement in democratic educational systems is subject to academic, public, media and political contestations* (2013, p.9).

On the other hand, Apple (1993, p.222) reminds us that:

> *Curriculum is never simply a neutral assemblage of knowledge, somehow appearing in the texts and classrooms of a nation. It is always part of a selective tradition, someone's selection, some group's vision of legitimate knowledge. It is produced out of the cultural, political, and economic conflicts, tensions, and compromises that organize and disorganize a people.*

It is worthwhile to highlight that in South Africa, the first policy document on education produced post-apartheid was called the White Paper on Education and Training (Republic of South Africa, 1995). Accordingly, this white paper resulted in the restructuring of the education and training system and the reorganisation of schooling (Le Grange & Beets, 2005; Msila, 2007). Amongst the notable changes were the establishment of a National Qualification Framework (NQF)[11] as well as the adoption of an outcome-based education (OBE) curriculum.

The literature indicates curriculum design and development involve various social actors. In the South African context Chisholm (2005) identifies three critical and dominant stakeholders on the review of South Africa's first post-apartheid curriculum (C2005), namely; the African National Congress, teacher organisations and university-based intellectuals. The debates by the social groups revolved around the technical form of the curriculum to be adopted by South Africa. Luke et al. (2013) remind us that the technical form of a curriculum is a fundamental document in maintaining the quality and equity of an education system. Furthermore, Luke et al. identify two types of

[11] National Qualification Framework is described as set of guidelines and principles through which learners' records of achievements are registered, thereby enabling national recognition of acquired skills and knowledge.

curriculum level prescriptions, namely; an overly-elaborated, detailed and enforced technical specifications (high definition) as well as less elaborate, detailed and constrained (low definition). They distinguish between what they call open and closed curriculum forms and argue that these forms of curriculum either encourage or discourage teachers' autonomy in dealing with the curriculum.

Thus, the technical form of the curriculum is important since it has the potential of enabling (open technical form) and disenabling (closed technical form) teachers' professional curriculum interpretation; thereby perpetuating inequality in educational outcomes. In other words, teachers as interpreters of the curriculum play a significant role in deciding how critical thinking can be taught.

2.5 SOCIAL SCIENCES

South Africa has witnessed ever-changing curriculum reforms. Post-apartheid the South African education system has witnessed the implementation of Curriculum 2005 (OBE), National Curriculum Statement, Grades 10-12, Revised National Curriculum, Grades R-9 and the Curriculum Assessment Policy Statement Grades R-12 (CAPS) which is currently in place. The value accorded to critical thinking is a recurring theme in these curriculum reviews (C2005, RNCS and CAPS) and can be traced to the introduction of OBE.

Given that the South African government post-apartheid was tasked with implementing socio-economic transformation, integration became the overarching concept for South Africa's education system particularly in the GET band. Accordingly, History and Geography were identified as the subjects that could be integrated into one learning area to enhance and promote the envisaged societal transformation (Iyer, 2018; Msila, 2007). Therefore, two subjects were regarded as components of Human Sciences and Social Sciences and seen as having content that had the potential to develop holistic thinking, thereby achieving societal transformation.

It would appear that none of the curriculum changes would be fully appreciated depending on an individual's preferences. It is no surprise that like other subjects, the Social Sciences curriculum has been affected by the three national curriculum changes and reviews since 1994. With the introduction of C2005 policy-makers

envisaged that this curriculum would effectively; replace content-based education with outcomes-based education, and teacher-centered methods with more learner-centered approaches (Le Grange & Beets, 2005; Wilmot & Irwin, 2015). By advocating for learner-centered approaches it would appear that policy-makers wanted to strengthen the teaching and learning of critical thinking.

Post-apartheid, Social Sciences curriculum reforms have been influenced by national priorities such as the articulation of voices and perspectives that were silenced (Iyer, 2018; Rusznyak, 2017). Rusznyak argues further that one of the overarching responsibilities of the post-apartheid government was to replace the curriculum that promoted transmission of knowledge and information with one which enabled the exploration of issues.

Iyer (2018) asserts that Black learners under apartheid education received mainly basic topics that lacked depth in terms of content knowledge, whilst their white counterparts were exposed to topics that enhanced and promoted critical thinking. The South African education system for black learners therefore; did not deepen geographical and historical awareness. As Iyer observes, the post-apartheid curriculum emphasises promoting human rights, social justice, and citizenship. This study adopts the social justice philosophy since it embodies the economic, human rights and active participation approaches in advancing critical thinking.

Rusznyak (2017) and Wilmot and Irwin (2015) also note that C2005 had an outcomes-based orientation design which reflected a subject integration principle. This has resulted in the discipline boundaries of the Geography and History being collapsed allowing for content to be packaged as learning areas. Rusznyak (2017) posits that the weakening of the boundaries of the Social Sciences disciplines resulted in conceptual knowledge being obscured. As a result, the skills-based approach propagated by the curriculum could not provide learners with opportunities to think systematically. Therefore the kind of integration resulting from OBE and C2005 did not deepen critical thinking since disciplinary knowledge was lacking.

The blurring of the subject disciplinary boundaries between Geography and History by creating an integrated subject, Human and Social Sciences, contributed to the subject's teaching and assessment losing its depth. Hence, it was neither "systematic

nor conceptually driven" (Rusznyak, 2017, p.47). As a result, the failure of C2005 arises from the fact that it was not foregrounded by concepts of powerful knowledge (Rusznyak, 2017). The study focuses on the powerful knowledge since it is conceptual and systematic; hence it is compatible with critical thinking. Therefore, the lack of organising concepts in the Geography curriculum resulted in some teachers viewing themselves as mere facilitators whose roles were to provide learners with opportunities to regurgitate what they already knew.

Le Grange and Beets (2005), as well as Nel and Binns (1999) raise concern around the diminishing role of Geography in the new curriculum emanating from integration. Le Grange and Beets (2005) argue that the main concern of Geographers about the integration approach of C2005, was their fear that the distinctive nature of Geography as a subject may diminish since the human geography component was now part of the Human and Social Sciences learning area, whilst the physical geography component was located in the learning area Natural Sciences. Some Geographers were concerned that the subject fields may be diluted if they were no longer integrated into the subject itself. The physical geography field was therefore located in the Natural Sciences theme 'the planet earth and beyond' (Le Grange & Beets, 2005). Kgari-Masondo (2017) deals with this integration concern highlighted by Geographers about the Social Sciences curriculum in the GET and argues that it resulted in a "pedagogical mischief" (p. 85). She is of the view that the split of the disciplines' content is not consistent with the name of the subject, Social Sciences. This split resulted in the teaching of the subject separately. Her arguments warrant a response, which I intend to address later.

It is clear that many people attribute the failure of C2005 to several issues, amongst them, was the devastating assumption made by policy makers in the implementation process that teachers would have the competence to design their learning programmes, thereby enabling learners to achieve the prescribed critical and specific outcomes (Le Grange & Beets, 2005). In other words, policy-makers assumed that teachers will be able to select content and teach in a manner that promotes critical thinking. Unfortunately, it turned out not to be.

Having realised challenges in the implementation of C2005; policy-makers decided to review the curriculum (Le Grange & Beets, 2005; Rusznyak, 2017). The product of the

curriculum review process produced what came to be known as the Revised National Curriculum Statement (RNCS, 2002). In the review process, certain design features were discarded whilst others remained, but simplified. Rusznyak (2017) notes that amongst the recommendations made by the Review Committee on C2005 were that the integration of the Geography and History disciplines be done in a manner that the distinctive concepts and 'ways of thinking' inherent of each discipline is enhanced and not compromised. According to Le Grange and Beets (2005), the RNCS represented a fundamental departure from C2005 since it provided a required balance between curriculum inputs and outcomes which was not available in C2005. This was made possible by the introduction of learning area assessment standards. Furthermore, assessment standards made knowledge progression from one grade to the next easier. According to Msila (2007), the adoption of the RNCS enhanced the fundamental principles enshrined in the constitution, namely; social justice, equality, reconciliation and democracy. Democracy, in particular enables learners to think critically. Education needed to empower learners for citizenship and for individual improvement to meet the requirements of the economy. These principles were retained from C2005.

Notwithstanding the progress in the adoption of the new curriculum, certain things remained notable in the introduction of the RNCS. Amongst them was that Geography as a subject, remained split, with physical geography component still located in the learning area Natural Sciences; whilst the human geography component was located in the Human and Social Sciences learning area.

Again, History and Geography were not recognised as distinctive and stand-alone learning areas as many Geographers would have wanted. However, each component had its discipline-specific learning outcomes and assessment standards thereof. This could signify challenges in the classroom for some teachers. Le Grange and Beets (2005) remind us that the depth of subject knowledge by the teacher is fundamental in achieving the curriculum. There would be challenges if the teacher teaching the subject Human and Social Sciences is only specializing in one discipline at the expense of the other. Possibilities are that the discipline of the teacher's specialization will be fore-grounded in his classroom. The implication would be that the teaching and assessment of critical thinking of the other discipline would be compromised.

Like in the case of C2005, RNCS was not immune to implementation challenges, to the extent that a Ministerial Review Committee was established in 2009 (Wilmot & Irwin, 2015).The work of this committee led to the development of what is known as the Curriculum and Assessment Policy Statement (CAPS, 2011).

2.6 CRITICAL THINKING IN SOCIAL SCIENCES CAPS

Wilmot and Irwin (2015) note that what distinguishes CAPS (2011) from C2005 and the RNCS is that CAPS emphasises a stronger "knowledge focus and strengthens the weak subject boundaries as seen in C2005 and RNCS" (p.141). This study maintained that the strengthening of boundaries creates space for the teaching of critical thinking in each discipline. Geography and History continue to be offered as components of Social Sciences. The two disciplines are explored separately in this study because they are presented separately in the aims and content specifications of the curriculum and also to enable me to dispel the notion of 'pedagogical mischief' as argued by Kgari-Masondo (2017).

There is consensus amongst some curriculum implementers that CAPS is explicit and detailed in terms of the prescribed content per grade and per subject (Rusznyak, 2017; Wilmot & Irwin, 2015). Moreover, Wilmot and Irwin (2015) argue that the content of the Social Sciences' Geography component is clear in terms of progression from one grade to the next in the primary school curriculum. Despite this, teachers and experts criticize CAPS for being content-heavy in ways that teachers pace curriculum coverage at the expense of deepening learners' understandings (Wilmot and Irwin, 2015). Using the description by Luke et al. (2013), one would call this kind of over-prescription of the technical form of curriculum 'closed'. This kind of technical form is criticized because it has the potential of limiting teachers' professionalism and deskilling them; thereby perpetuating unequal educational outcomes.

CAPS (2011) policy-makers argued for teaching and learning to move away from the traditional teacher-centered lessons with rote-learning to what is viewed to be creative and critical learning in all subjects which is presented as the technical form of the subject. On the other hand, teachers exercise their professionalism through the selection of appropriate pedagogical and instructional approaches. This study

explores the interface between policy and practice with a particular interest in critical thinking.

Although curricula have changed at least three times in South Africa little has changed in how Social Sciences is taught and assessed in a manner capable of promoting and enhancing critical thinking. Such a state of affairs warrants an investigation on how teachers understand critical thinking, and how such understandings influence their practices.

CAPS (2011) supports the use of integration in its critical outcomes. A review of CAPS (2011) as part of the literature review in this study indicates the purpose, principles, skills, and aims as fundamental aspects of the curriculum. Therefore, the tighter subject boundaries lend themselves to teaching discipline-specific critical thinking. The study hopes to explore the extent to which teachers work with the thinking skills involved in the History and Geography components respectively and align these to the prescribed content to support critical thinking.

Kgari-Masondo (2017) argues that the integration of the History and Geography disciplines represented as Social Sciences subject in the CAPS, is “mischievous” as it does not depict the reflective praxis of the subject pedagogically” (p. 85). She decries the fact that the policy dictates that the History and Geography curriculum must be taught and assessed separately as distinctive components. According to her, the teaching and learning process in the policy context is separated since the content is represented separately by separate annual teaching plans. Integration is only visible when summative marks are recorded for reporting purposes to various stakeholders. It is only at this level that the components are reflected as Social Sciences. For her, the quality of learning and teaching can only be realized when the disciplines are taught together.

Kgari-Masondo’s (2017) argument about the so-called mischievous integration puts us in a precarious position. For it appears to require us to choose between teaching to achieve and demonstrate societal transformation or teaching to deepen disciplinary knowledge. So, do we pursue the kind of integration she calls for and abandon disciplinary knowledge and unique teaching approaches inherent in the two disciplines? If not, how do we subsume the two disciplines? Kgari-Masondo’s position is that pedagogical integration of Social Sciences disciplines encourages critical

thinking around social issues and therefore gives voice to more people. The position of this study is that discipline-specific integration enhances conceptual development that supports critical engagement.

However, it is my view that a short-sighted concern to prioritise the kind of integration Kgari-Masondo (2017) calls for negates the view that integration of the two components must enhance the historical thinking and geographical thinking inherent in the disciplines (Rusznyak,2017). Reflecting on the history of the Social Sciences curriculum, it would appear that what she recommends is exactly how Social Sciences was structured, where the two disciplines were subsumed in each other in the C2005. Kgari-Masondo's main concern is that the separation of the two disciplines does not reflect nor align with the integration suggested by the name Social Sciences. In other words, there is a lack of pedagogical integration in the teaching of Social Sciences since the two disciplines are taught and assessed separately. A counter-argument is that the policy deliberately separated the disciplines of History and Geography and that each discipline requires discipline-specific teaching pedagogies. Similarly, in the Further Education and Training (FET) Band disciplines become stand-alone subjects and that learners need a strong background of each component as reflected by the progression of each subject in the IP. So, if the disciplines were to lose their distinctive 'ways of thinking' in the GET phase, the final three years in FET does not provide sufficient opportunity to teach discipline-specific skills. Already the NSC Diagnostic report, (2016) cited in this study has indicated that matric candidates struggle with the 'ways of thinking' in these two subjects or disciplines.

Two fundamental design features arise in the debate around curriculum development and integration specifically, namely 'continuity and progression' Beets and Le Grange (2008). Beets and Le Grange (2008) remind us that,

> *Continuity and progression are the hallmarks of quality learning. Continuity relates to the extent to which significant features of a discipline are emphasised as a learner moves through the school system. Progression refers to the way a learner's knowledge, skills and understanding are deepened in a given knowledge area as he or she moves through the school system* (p.68).

It is the view of this study that concern about pedagogical integration raised by Kgari-Masondo (2017) does not address the demand for the deepening of each discipline's content knowledge through appropriate teaching and assessment approaches. While

she suggests that the two components should be subsumed to reflect trans-disciplinary integration through pedagogy, I argue that such an approach overlooks problems arising from integration. Rather, the problems inherent in the Social Sciences integration call for those responsible for teacher training and development to intensify teacher development programmes to induct teachers in relevant subject discipline approaches and 'ways of thinking' of each discipline. This will by implication immerse learners to discipline-specific teaching and assessment approaches. Therefore, if something drastic was to happen, as she calls for, this study suggests that it should be that the two components are recognised as stand-alone subjects at primary school level like it is done in the FET.

During the implementation of C2005, the content of the two disciplines was never intended by policy-makers to be subject-specific/discipline-specific in the GET (Le Grange & Beets, 2005). Subject-specificity would be addressed in the FET. Le Grange and Beets ignore how the essence of the powerful knowledge (represented by content discipline) was undermined by the integration in C2005. Their position contradicts the findings that an integrated approach undermines the systematic development of conceptual knowledge that is necessary for critical thinking.

Following is a discussion of the subject disciplines of Social Sciences on how they link with the concept of critical thinking. The disciplines are explored separately because they are presented separately in the aims and content specifications of the curriculum.

2.6.1 The Geography discipline of Social Sciences: What constitutes geographical knowledge or thinking?

The study of Geography is littered with definitions that attempt to explain what constitutes the subject itself, to the extent that some define it as a discipline constituted by its knowledge structures whilst others view it as applied science. A useful definition is that as a subject, Geography draws on the knowledge of other subjects which include economics, chemistry, zoology, botany, physics, and sociology. It studies the Earth; as a physical object and environmental context in which human activity and the natural process interact (Rusznyak, 2017).

As South Africa emerges from past divisions, many experts believe that there is a significant role for Geography in the post-apartheid curriculum due to its focus on the

relationships between environment and people, international as well as cross-cultural issues (Nel & Binns, 1999). They argue that the status of the subject is justifiable considering that it focuses on geographical skills such as “field investigation, data collection and analysis, the appreciation of a range of different attitudes and values” (p.10). Moreover, Rusznyak (2017) posits that the study of Geography provides a systemic way of empowering learners to understand and explore issues to make informed decisions about the environment. The study of Geography enables learners to explore the impact of human behaviour such as deforestation and waste management and study the impact of climate change. This form of characterisation of the aim of Geography is consistent with the teaching of critical thinking. This assertion is supported by Rusznyak (2017, p.50), when she argues,

> *To establish the foundations of systematic thought in a subject, it is essential that Geography teachers' questions induct learners into geographical ways of thinking about the world. If teachers are to achieve this, then within each organising concept, learners need to be asked the kinds of questions that lead them to systematic and geographical ways of thinking. If Geography teachers ask questions that are not geographical in nature, then the lessons that follow are unlikely to help learners develop a systematic way of analysing their place in the world around them.*

Teachers should identify the central concepts they foreground in their lessons, and develop geographical thinking around the same concepts. For that to happen, teachers should view themselves as subject experts, and then as interpreters of the curricula (Rusznyak 2017). This will enable them to identify the geographical nature of the subject content to be taught. Furthermore, teachers should demonstrate knowledge of their subject to notice opportunities to enhance geographical thinking in the prescribed curriculum. The quality of geographical learning experiences that learners engage in depends on teachers' understanding of content and activities that constitute meaningful learning in the subject. Such understanding enables teachers to interpret the curriculum and also to frame the content of the lesson to be taught.

Maude (2016) explores the meaning of powerful knowledge by focusing on the characteristics of powerful knowledge and the power that those who have it, possess. She identifies five types of geographical knowledge that constitute powerful ways of thinking and analysing which should be introduced in the Geography school curriculum

because they stimulate young learners' critical thinking abilities which can be applied to the aims of geography knowledge and content. These knowledge types enable learners to make sense of factual knowledge, to be able to make use of explanatory concepts and to be able to make coherent judgments in the subject discipline. They are: the knowledge that provides students with new ways of thinking, that provides students with powerful ways to analyse and explain, gives students some power over their knowledge, and knowledge that enables learners to participate in debates on significant issues (Maude, 2016, p.70).

The characteristics identified by Maude (2016) lend themselves to critical thinking. According to Maude, geographical ways of thinking are regarded as powerful when they accord learners new views and understandings and as a result, may change their behaviours. The new ways of thinking are embedded in geography's major concepts which include space, place and environmental issues. The significance of these concepts is to provide learners with conceptual tools that enable conceptual development, theories, and explanations. For Maude knowledge is powerful when it enables learners to understand and explain either phenomena or events. She identifies three forms of conceptual knowledge that have such power, namely; 'concepts that have analytical power, concepts that have explanatory power, and generalizations' (Maude, 2016, p.73). Maude argues that powerful geographic knowledge empowers learners to evaluate assertions about knowledge, and become critical thinkers. Furthermore, learners should be exposed to ways in which knowledge is created and use "epistemic tools provided by the discipline to construct knowledge" (p.75). She asserts that powerful geographical knowledge enables learners to participate in debates in a democratic society as equal members.

2.6.2 The History discipline of Social Sciences: What constitutes historical knowledge or thinking?

A widely held notion is that there is a resistance towards teaching History in a way that promotes the depth which is inherent to the subject itself (Mayer, 2006).
Although the teaching and learning of History have witnessed some reforms, there is a consensus that a greater emphasis should be placed on historical interpretation and historical enquiry (Barton & Levstik, 2003; Martell, 2013; Seixas, 2006).

The professional life of historians involves historical thinking which is made possible by interpreting sources. Working with sources is fundamentally the “sine qua non of historical thinking” (Van Sledright, 2004, p.231). It is also a complex activity that requires critical thinking. Moreover, for learners to engage in historical thinking, they need to create or reconstruct the past to answer questions. However teaching historical thinking by emphasising memorizing facts based on textbooks content undermines the teaching of historical thinking. Learners must be exposed to assessments that teach learners to investigate the past by interrogating sources. Such assessment tasks or activities should enable learners to write ‘interpretive essays’. Furthermore, the inherent instructional procedures of History and the relevant subject content are fundamental instruments learners need to interpret sources and construct their historical understandings in the learning process (Bickford, 2013).

Historical interpretation enables learners to consider multiple views resulting from divergent interpretations. Advocates for historical interpretation argue that teachers should move away from mere transmission of knowledge and information about the past; and that learners should learn how stories about the past are developed; thereby engaging in historical investigations. The process of historical investigation enables learners to analyse and interpret primary sources to understand existing relationships between “historical evidence and the construction of accounts-both their own and those of others” (Barton & Levstik, 2003, p.358).

Similarly, original primary sources should be viewed as a focal point for historical interpretation and historical inquiry (Barton, 2005). Barton identifies four functions of original historical sources. First the function of sources is to motivate historical inquiry because they have the potential to stimulate learners’ curiosity, and provoking questions. They create a conducive classroom environment for discussion as original historical sources can create “cognitive dissonance” (p.751). Second, they provide evidence for historical accounts and learners should understand that historical accounts by their nature are provisional and based on conflicting evidence. Learners should analyse how sources have been used in the historical accounts of others. Third, they convey information about the past and enable learners to visualize events, and constitute an effective way of conveying information or knowledge. Written historical

sources may be more effective in teaching and learning than secondary historical sources. Fourth, is to provide insights into the thoughts and experiences of people in the past. Historical sources such as letters and diaries may provide learners with insights that enable them to engage critically, and construct better understandings of the past.

Wineburg (1991) supports the notion that teachers should create opportunities for learners to work with sources. However, he decries the lack of research that can guide teachers on how to use such sources, since the study of History has been neglected by experts in the field of cognition and instruction. Wineburg's view is consistent with the aim of this study which seeks to gather data on teaching and assessing critical thinking. Since the study of critical thinking in Social Sciences in primary schools has been neglected, the findings of this study may assist teachers in developing appropriate strategies and activities which enhance the teaching of critical thinking.

A critical question raised by Barton and Levstik (2003) which is central to this study is to establish 'why would some teachers engage learners in historical investigations, while others expect them to reproduce knowledge? To answer this question, Martell (2013) suggests that literature reveals that although teachers understand that instruction should enable learners to construct historical knowledge and historical inquiry, it is not evident in their classroom practices. He asserts that:

> *history teacher education appears to be somewhat successful in influencing prospective teachers' beliefs, but not changing their practices* (Martell, 2013, p.17).

Martell (2013) holds the view that if those of us involved in supporting the teaching of critical thinking understand the reasons for the disconnection between the beliefs of teachers and teachers' practices in teaching for critical thinking, we may be able to develop teachers' ability to teach the discipline as interpretation. His view is consistent with the aim of this study. The analysis of teachers' instruction and assessment practices and beliefs may enable me to explore the teaching of critical thinking. This study argues that critical thinking is enhanced and promoted through discipline-based pedagogy.

Some teachers have reasonable pedagogical knowledge; implying that they possess an accurate and deep understanding of how learners create historical knowledge (Barton & Levstik, 2003). Their understanding of the past depends primarily on the interpretation of evidence. However, not all teachers know how historical knowledge is created, and how it can be brought about into the teaching and learning environment. Another group may have an understanding of historical knowledge construction and relevant teaching approaches but choose just not to incorporate this into teaching, learning and assessment because "that kind of teaching would conflict with what they see as their two primary tasks; namely: controlling students' behaviour and covering content" (Martell, 2003, p.359). The last group consists of those teachers whose beliefs and purpose enable them to teach and assess in ways that promote historical interpretation and historical enquiry and are not dictated to by the need for curriculum coverage and control of learners. They see the aim of teaching history is to introduce learners to forms of knowledge which are relevant to History.

Van Sledright (2004) shows that to think historically is a complex activity; hence some teachers think that it cannot be introduced in primary and secondary schools. Nevertheless, Van Sledright asserts that historical thinking should not be viewed as only the space of historians nor older learners. Teachers can close the gap between experts and novices by improving the way they teach the subject: by creating opportunities for learners to work with sources even in the IP, in all the subjects. Similarly, Seixas and Peck (2004) agree that historical thinking may be complex for beginners, and therefore a frustrating experience for teachers, but that it is possible to immerse learners into History since they have incomplete and inaccurate images of the past. History teaching and learning should develop learners' fragmented thinking to allow them to make sense of their lives. Historical thinking is developed by the design of age-appropriate tasks and as a result, the teaching of historical thinking should not wait until learners are adults. Even young learners are capable of historical thinking (Bickford, 2013).

Historians demonstrate an ability to evaluate the nature of sources they work with. Van Sledright (2004) identifies four related cognitive acts used in assessing sources, namely; identification, attribution, perspective judgment, and reliability assessment. Identification requires historians to know what a source is to establish claims and interpretations which may be deduced from the source. Attribution requires historians

to recognise that sources are the construction of an author to serve a particular purpose. The historian engaging in historical thinking should be able to locate the author of the source within his historical context. Judging perspective enables the historian to read the source with care; thereby evaluating the author's cultural, political or social position. The historian is forced to read between the lines to pass judgment. Reliability involves the historian's ability to assess various historical accounts about the same issue or event. The historian assesses historical accounts in order to determine the value of each account. The historian should judge the reliability of evidence by drawing comparisons with other accounts to seek corroborations.

The study takes the view that 'meaningful learning' is a fundamental educational goal that requires instruction and assessment to go beyond a mere presentation of facts and allow learners to employ higher cognitive processes (Mayer, 2002). From the literature review about Geography and History, it is clear that the skills required for geographical thinking and historical thinking are cognitive processes that occur in the upper levels of Bloom's taxonomy. It is for this reason that the revised Bloom's taxonomy is adopted as the conceptual framework of this study.

2.7 CONCEPTUAL FRAMEWORK

The taxonomy of educational objectives is a framework for classifying statements of what is intended of learners to learn as a result of instruction (Anderson, 2002; Krathwohl, 2002). There is a consensus that the taxonomy table of the revised Bloom's taxonomy focuses on learning rather than learners' performance and thus it emphasizes the focus on the cognitive processes and types of knowledge required to achieve curriculum outcomes (Airasian & Miranda, 2002). Bissell and Lemons (2006) take the argument further and indicate that when developing instruction and assessment, teachers should be cognizant of both content and critical thinking skills.

The revised taxonomy provides opportunities for teachers to address higher-order thinking skills, thereby allowing learners to acquire knowledge and use that knowledge in new situations (Krathwohl, 2002). Through the taxonomy table, teachers can judge the effectiveness of their teaching in terms of what learners learned (Amer, 2006). In

addition to aligning activities and assessments with objectives, the taxonomy enables teachers to raise learning targets (Rath, 2002).

The revised Bloom's taxonomy of Educational Objectives (Anderson et al., 2001) lends itself to analysing how teachers' teaching and assessment practices promote critical thinking. This study adopted the revised Bloom's taxonomy as a theoretical framework because there is 'evidence that describing curriculum alignment based on both knowledge and cognitive processes is more robust than other methods (Anderson, 2002, p.258). In addition, Bloom's taxonomy is viewed as an accepted explanation for different types of learning and is applied in the development of objectives for teaching and assessment (Bissell & Lemons, 2006). The view of this study is that by analysing teachers' instructions and assessment, one may understand how teachers' practices and knowledge enhance the teaching of critical thinking in Social Sciences disciplines. In assessing the teaching of critical thinking, this study is guided by the weighting of cognitive skills prescribed by CAPS.

The revised Bloom's taxonomy is two-dimensional and reflects the cognitive process dimension and the knowledge dimension which represents a dual perspective on learning and cognition (Airasian & Miranda, 2002). The knowledge dimension constitutes factual knowledge, conceptual knowledge, procedural knowledge and metacognitive knowledge (Appendix F). The cognitive dimension is described below (table 2.1).

Table 2.1 Descriptions of the cognitive levels of the revised Bloom's taxonomy

Cognitive level	**Description**
Remembering	Remembering: Retrieving, recognizing, and recalling relevant knowledge from long-term memory
Understanding	Constructing meaning from oral, written, and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.
Applying	Carrying out or using a procedure through executing, or implementing
Analysing	Breaking material into constituent parts, determining how the parts relate to one another and an overall structure or purpose through differentiating, organizing, and attributing.

Evaluating	Making judgments based on criteria and standards through checking and critiquing
Creating	Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing.

Source: Adapted from Anderson & Krathwohl (2001, P.67-68).

The revised framework "may help teachers plan and deliver appropriate instruction, design valid assessment tasks and strategies, and ensure that instruction and assessment are aligned with the objectives" (Anderson et al., 2001, p. xxii). Moreover, the revised framework provides a clear, concise, visual representation of content assessed and may be used to check relative emphasis, curriculum alignment and missed educational opportunities (Krathwohl, 2002). Airasian and Miranda (2002) argue that the two dimensions of the revised taxonomy assist teachers in the process of stating clearly defined assessments and a stronger connection of assessment to objectives and instruction. For Airasian and Miranda (2002), the taxonomy table calls for teachers' assessment practices to go beyond the 'discrete bits of knowledge and individual cognitive processes to focus on more complex aspects of learning and thinking' (p.249).

The CAPS policy (2011) indicates the weighting of cognitive skills in Social Sciences whilst the revised Bloom's taxonomy was an appropriate tool to offer opportunities for teachers and stakeholders to see the quality of teaching and learning.

This chapter explored relevant literature in the subject of critical thinking as an overarching aim of education in South Africa's curriculum and highlighted how various experts characterise and define the concept of critical thinking. The challenges and obstacles constraining the promotion of critical thinking were also explored. It explored how the history of curriculum design and development in Social Sciences unfolded since the advent of democracy in 1994 in South Africa and dealt with the challenges emanating from the integrated curriculum of Social Sciences and how that may affect the teaching of critical thinking. The concept of powerful knowledge was used to explore the nature of geographical and historical thinking. Furthermore, the chapter explored whether CAPS provides opportunities for the teaching of critical thinking in Social Sciences.

Finally, the Revised Bloom's taxonomy was discussed as the appropriate instructional and assessment tool for promoting critical thinking in Social Sciences and its appropriateness as a framework for the analysis of data.

CHAPTER THREE: RESEARCH METHODOLOGY AND DESIGN

According to Ravitch and Riggan (2012), a theoretical framework should support research by offering a relevant explanation of findings. The data provides the researcher with the raw material needed to explore the research questions and the analytic approach allows the researcher to respond to those questions. This study used qualitative research methodology and an "interpretative, constructivist or post-positivist approach" (Leedy & Ormrod, 2005) that employs observation or face- to- face interactions to generate data from participants (McMillan & Schumacher, 2010).

As this study focused on the Social Sciences teachers' perceptions and experiences of teaching critical thinking, I interviewed grade six teachers and analysed formal assessment tasks in learners' books. I then employed the taxonomy table (Anderson et al., 2001) to assist me to gain insights into the nature of the formal assessment tasks written by learners in respect of the teaching of critical thinking.

3.1 RESEARCH DESIGN

The purpose of a research design is to specify the strategy for generating evidence necessary to answer the research question (McMillan & Schumacher, 2010). This study adopts a case study research design. A case study examines a 'bounded system, or a case, over time in-depth, employing multiple sources of data found in the setting' (McMillan & Schumacher, 2010, p.24). In this study, the case is the selected three grade six Social Sciences teachers who provide insights into the teaching of critical thinking in grade six. At this stage, the researcher must restate the research questions as the overarching pillars of this case study.

The research questions are as follows:

• How do grade six teachers understand critical thinking in Social Sciences?

• How do teachers' understandings of critical thinking influence their pedagogical/instructional and assessment choices?

The data collected to understand critical thinking in Social Sciences consisted of interviews about the teaching approaches and strategies teachers employ in

promoting critical thinking. The second research question about factors that influence teachers' selection of particular approaches in teaching and assessing critical thinking consisted of interview data and an analysis of formal assessment tasks in learners' exercise books.

3.2 RESEARCH METHODS

Selecting the participants

This case study used purposive sampling to gather in-depth knowledge from participants, which is relevant to the research problem (Wiersma & Jurs, 2009). Case studies are small in size, and as a result, this study constituted a small number of schools and teachers as participants. In this study, I chose one Social Sciences teacher who taught both the History and Geography components in each of the three schools.

3.2.1 Research sites

I selected the top performing primary schools in accordance with the following three categories: township; former model C[12] and independent. The high performing schools were identified using data from the district. The selection of schools from different socio-economic contexts (quintiles) allows for a more nuanced understanding of whether the teaching of critical thinking is taught differently in different contexts.

McMillan and Schumacher (2010) argue that researchers must define criteria for the selection of the research site and such criteria should be both related to; and appropriate for the research problem and design. In this study, three primary schools in one of the districts in the Gauteng Department of Education (GDE) in the Gauteng province were selected as research sites. The researcher selected one township school (school A[13]), one former model C school (school B[14]), and one independent

[12] Model C: is a term used to describe former whites-only public schools during apartheid era in South Africa.
[13] School A: The township school in this study is classified as Quintile 2 (no-fee-paying) and has a general shortage of basic infrastructure and learning and teaching material.
[14] School B: The former model C school in this study is a fee-paying school.

school (school C[15]). According to the DBE funding model[16], the township school is classified under Quintile 2 (no fee-paying). The determination of Quintiles is generally based on the unemployment and income levels within the school area.

3.2.2 Teacher profiles

The selection of participants and the sample size is summarized below.

Table 3.1: Research sample size

School category	Township	Former model C	Independent
Subject component	Social Sciences: Geography discipline History discipline	Social Sciences: Geography discipline History discipline	Social Sciences: Geography discipline History discipline
Number of teachers	1x teacher	1x teacher	1x teacher

The participants volunteered and are currently teaching Social Sciences in grade six. They had four or more years' experience in teaching Social Sciences in the IP. Participants provided their biographical detail by filling in a biographical questionnaire.

Table 3.2: Biographical information

Partici-pants	**Gender**	**Age**	**Teaching experience**	**School category**	**Subject taught and grades**	**Subject specialization**	**Qualifications**
T1	Male	30+	5 years	Township	Social Sciences (grade 6) English First Additional Language (grade 6)	Sociology and Anthropology	BA PGCE PDM
T2	Female	40+	19 years	Model C	Social Sciences (grade 6) Life skills-PSW (grade 6)	Inclusive Education	PTD ACE BED Honours

[15] School C: The independent school in this study is a Christian fee paying school.

[16] Government gazette: Vol 507 No 30322 determines national norms and standards for school funding in relations to unemployment and income levels of the school's surrounding community. Schools are classified from Quintile 1 to Quintile 5.

T3	Female	40+	4 years	Independent	Social Sciences (grades 4-7)	Mathematics and Physical Sciences	BSc BSc Honours MSc PhD

Key: Acronyms[17]

Description of participants

Teacher 1(T1)

Teacher 1 indicated that he never wanted to be a teacher but had an interest in helping communities. He had not received CAPS training but relies on the ongoing teacher training and development activities organised by the district.

Teacher 2 indicated that she had received training since at the year of CAPS inception; she was already a teacher. Moreover, she relies on the school's organised teacher training and development activities and the others which are organised by the district.

Teacher 3 has no formal training in teaching, but her passion, enthusiasm, and knowledge of educational issues are commendable. She has not received CAPS training. However, she believes that the workshops and training that she receives from amongst others, her labour union; has helped her.

3.2.3 Data collection

Data collection could either be interactive or non-interactive (Wiersma & Jurs, 2009). Interactive data collection allows for an interaction between the participants and the researcher. In this study, I adopted an interactive strategy through the use of open-ended interviews and document analysis. The use of two or more data collection instruments assisted me to achieve trustworthy findings and to reduce possible bias. Triangulation is a data collection research strategy that involves at least two or more

[17] T1: Teacher 1
T2: Teacher 2
T3: Teacher 3

PTD: Primary Teachers' Diploma
ACE: Advanced Certificate in Education
PGCE: Postgraduate Certificate in Education
PDM: Postgraduate Diploma in Management
BA: Bachelor of Arts
BED: Bachelor of Education
BSc: Bachelor of Science
MSc: Master of Science
PhD: Doctor of Philosophy

techniques or sources (Wiersma & Jurs, 2009). Triangulation helped me to address inconsistencies and contradictions that may emerge during data analysis. The section below is a discussion of the data collection methods employed in this study.

3.2.3.1 Interviews

Qualitative interviews consist of open-ended questions that provide qualitative data (Johnson & Christensen, 2017). In this study I employed semi-structured interviews as a means of collecting information which has direct bearing on the research objectives (Cohen et al., 2011). The research questions and the theoretical framework served as a frame of reference for the development of the interview schedule. An interview schedule was prepared (Appendix D). The biographical questions asked the participants about their academic or professional qualifications as well as their experience in teaching Social Sciences in grade six. The reason for including biographic questions was to allow me an understanding of whether teachers with different qualifications and experiences teach critical thinking differently. The interview questions should be linked directly to the objectives of the study and follow a sequence that will be adhered to in each interview conducted by the researcher (McMillan & Schumacher, 2010). Open-ended questions allow the researcher to ask follow up questions to seek clarity from participants. Cohen et al. (2011) assert that open-ended interviews provide an opportunity for participants to respond to the same questions, thereby enabling the researcher to compare responses.

McMillan and Schumacher (2010) regard a pilot study to be a fundamental step in research. I presented the interview schedule (Appendix D) to a grade six Social Sciences teacher and recorded his responses. This process assisted in reviewing some questions, thereby eliminating ambiguity and bias. The findings of the pilot interview process were not included in the final research report.

3.2.3.2 Task analysis

I analysed learners' formal assessment tasks in exercise books to verify and corroborate the information derived from interviews. Moreover, triangulation added a

different qualitative dimension to the study, thereby deepening my understanding of participants' practices.

In this study, formal assessment tasks in learners' books were an example of a primary source in research and they provided evidence of the teaching of critical thinking in the Social Sciences in grade six. The formal assessment tasks which were used in this study were used for recording and reporting at the end of term one of the academic year. Given that Social Sciences CAPS (2011) prescribes one task each for Geography and History in a term, the study included both the Geography and History tasks. Therefore, each participant provided me with one Geography task and one History task; that is altogether, the tasks were six in number from the three participants (see table below).

Table 3.3: Number of tasks analysed in the study

School category	Township	Former model C	Independent	Total number analysed
Number of formal assessment tasks	1x Geography formal assessment task 1x History formal assessment task	1x Geography formal assessment task 1x History formal assessment task	1x Geography formal assessment task 1x History formal assessment task	
Total number of tasks per participant	2	2	2	6

Data collected from the formal assessment tasks helped me gain a deep and thorough understanding of the research topic and questions. The evidence in the form of formal assessment tasks confirmed the views of the research participants regarding the teaching of critical thinking. The teaching and assessment of critical thinking in Social Sciences tasks were analysed using the taxonomy table. The coding of the tasks was done by highlighting the cognitive skills in the questions or statements with the view of ascertaining the skills that participants want learners to demonstrate in the learning process.

3.3. Data coding and analysis

In this study, data analysis involved making sense of the participants' explanations, noting themes, patterns, and categories. Johnson and Christensen (2017, p.570) define transcription as the "process of transforming qualitative research data into the typed text". In qualitative research, data analysis requires organisation of information and data reduction through the process called coding (Wiersma & Jurs, 2009). McMillan and Schumacher (2010) posit that coding involves organising data into categories as well as identification of patterns and relationships among the categories.

3.3.1 Interview analysis

In this study, data analysis involved making sense of the participants' explanations, noting themes, patterns and categories. Identifying categories informed the writing of the next chapter. Analysis of data was based on data derived from the interview schedule (Appendix D). The research questions of the case study served as a reference point for the analysis process. To make meaning of the data, I analysed and interpreted data from the interview transcripts of the sampled teachers both during and after the data collection processes.

3.3.2 Formal assessment task analysis

Data collected from formal assessment tasks in learners' exercise books were analysed. The research questions served as a reference point for the analysis process along with the taxonomy table (Appendix E). I also discussed the tasks with teachers and classified the objectives reflected in the formal assessment tasks (test items) in the taxonomy table. This was done by scrutinizing the question's or statement's verb and noun. The verb in the question or statement highlighted the teacher's intended cognitive domain to be assessed; whilst the noun described the knowledge domain the teacher intended to assess.

3.4 Rigour

Research should be concerned with producing knowledge that is valid and reliable. For research to have significant value to educational practice, it should be “rigorously conducted” to present trustworthy insights and conclusions. Research results are trustworthy when there has been some accounting for their validity and reliability (Merriam, 2001). In effect, the concept of rigour addresses the appropriateness of the data collection instruments, the data analysis approaches and the connectedness between the conclusions made and the data collected. In this study, I ensured that the research methods are appropriate to answer the research questions. I used more than one research method to validate the data collected from the participants.

3.5 Credibility, validity and reliability

Leedy and Ormrod argue that there is a need to measure something accurately and consistently. They argue that,

> *“the more valid and reliable our measurement instruments are, the more likely we are to draw appropriate conclusions from data we collect and, thus, to solve our research problem in a credible fashion”* (2005, p. 93).

The use of interviews and document analysis was undertaken consistently by following the same procedure across the schools and their teachers participating in the case study. As Leedy and Ormrod (2005, p.93) argue “there should be standardization in the use of the instrument from one situation or person to the next”. Interviews and formal assessment task analysis were viewed to be the most appropriate instruments to enable the researcher to collect and analyse the data reliably in answering research questions for this study.

To enhance validity on completion of the research findings, I sought feedback from fellow students in the field to establish if they agree or disagree with my interpretations of data and that I have drawn appropriate conclusions from data. Merriam (2001) calls this strategy ‘peer examination’. Furthermore, I solicited validation from respondents or participants in the study to ensure that I captured their responses appropriately.

Merriam (2001) calls this strategy ‘member checks’. I conducted repeated visits to the research sites and reevaluated the data gathered to strengthen data validity. Repeated visits to the participants enabled me to verify if I understood and interpreted the participants correctly. Merriam (2001) calls it ‘long term observation’.

3.6 Transferability

As a case study, the research has the potential of producing results that have wider applicability to other real-world contexts (Leedy & Ormrod, 2005). According to Scott and Morrison (2006) transferability requires the researcher to provide a thick description of the research setting. Although this study is of limited scope, its findings may be transferable to similar situations and therefore provide me with an understanding of teachers’ perceptions and experiences in teaching and assessing critical thinking in grade six Social Sciences.

3.7 Ethics

Ethics is an essential aspect of research that should be considered throughout the data collection, reporting, and the distribution or research report processes. Researchers should report or present data honestly without alterations intended to suit certain predictions (Cresswell, 2012). Meanwhile, Merriam (2001, p.213) argues that “overlaying the collection of data and the dissemination of findings is the researcher-participant relationship”. The role of ethical considerations in this study was to ensure that participants were informed of the purpose of the study, that they should give their consent and that they are guaranteed privacy and protection from any kind of harm. In this study, I made sure that all three participants were aware of their rights to pull out their participation if they so required to do so. For these reasons, it was important for me to observe the ethical consideration laid down by the University of the Witwatersrand. In this study, I followed the guidelines of the University accordingly. Permission to conduct the study was granted by the University of Witwatersrand’s ethics committee (Appendix A). I requested and was granted permission to collect data from the Gauteng Department of Education (Appendix B).

To ensure that this study is ethical, participants volunteered their participation. I submitted letters of request to conduct the study to the respective schools and the participating teachers. Participants personally received the letters and consent forms to indicate whether or not they will participate (Appendices N - P). In writing, I assured the participants of their anonymity and confidentiality as no information that would lead to their identity being exposed will be used in the research report. Therefore, the names of schools and teachers/participants were not used in the report. I used pseudonyms to refer to teachers in the case study, namely; T1, T2 and T3 respectively. Permission was also sought from the principals of the participants, which was granted (Appendices Q and R). All participants were informed that their participation in the study is voluntary and were also informed of the purpose of the study. The participants were assured that the data collected will only be used for the partial fulfillment of the Master of Education Degree.

In this chapter, I described the research design and methodology employed in the data gathering process and outlined the processes and procedures that I undertook to collect the data. The chapter presented the reasons for the selection of the research design, data collection tools and the selection of the participating teachers and their schools as research sites in this study. The ethical processes and procedures as well as measures undertaken to ensure trustworthiness were also explained in detail.

The following chapter presents the analysis and interpretation of data collected.

CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

This chapter presents the research findings and interpretations of data through narratives and tables. The chapter also presents the link between research questions and interview questions (Appendix G). The interpretation of the findings was guided by the research questions.

4.1 INTERVIEWS

In this study, it was evident that teachers had a partial understanding of what critical thinking is. Their definition and characterisation of critical thinking were consistent with the cognitive levels on Bloom's taxonomy. During interviews, teachers claimed that they enhance critical thinking through debates and the use of pictures and case studies.

The findings in this study revealed that whilst participants had a substantial understanding of strategies and approaches for teaching critical thinking, they did not assess critical thinking in grade six Social Sciences effectively. This conclusion was substantiated by the analysis of the formal assessment tasks through the use of the taxonomy table (Appendix E). This could mainly be attributed to participants' beliefs that primary school learners could not engage in critical thinking and that, adhering to the prescribed weighting of the cognitive levels in the Social Sciences policy would result in many learners failing the subject.

4.2 THEMES

To identify themes for the study, I identified links between research questions and interview questions (Appendix G). The following discussion identified the four themes from the data and substantiated by the interview responses, namely; perceptions and experiences of Social Sciences teachers; the role of SMT in managing quality teaching and assessment in the school; teachers' interpretation of intended curriculum and policy and the enacted curriculum.

4.2.1 Theme 1: Perceptions and experiences of Social Sciences teachers

The participants in this study confirmed that they understand what critical thinking is. Participants' definitions and characterisations highlighted some of the cognitive levels on Bloom's taxonomy. They used words such as applying one's mind, analysing, forming judgment and evaluation.

This is how the participants defined and characterised critical thinking:

T1 had this to say:

> *... critical thinking is applying your mind based on your background knowledge* (T1, p.1, line 1).

T2 also, identified some cognitive skills. She commented:

> *… critical thinking is about analysing, evaluating an issue to come up with a judgment and thereby making a conclusion* (T2, p.10, line 1).

Similarly, T3 used a cognitive process example. She said:

> *Ok, being able to form your own judgment from all the facts available on any particular subject or matter* (T3, p.15, line1).

Participants' definition and characterisation of critical thinking were supported by the literature review (Barak et al., 2007; Duron et al., 2006; Gecit et al., 2017; Halpern, 1998; Mulnix, 2010; Willingham, 2008). Participants placed different emphasis in their characterisation of critical thinking, namely; background knowledge and making their own judgment.

In respect of the contestation of whether primary school learners can engage in critical thinking, participants expressed different views. T1 made it clear that grade six learners could not engage in debate, which is one of the strategies for teaching critical thinking. He commented thus:

> *…in grade six I will not expect a learner to actually debate. … the challenge might be the language, but when you listen to them, when you observe, like when they talk with each other, you see there is some sense of critical thinking. … I think you can find more questions that will require group work, mmm, where they can discuss. But our problem in our public schools and township schools is that as teachers, we then find ourselves avoiding such activities because we have huge numbers in the classroom and the moment you start doing exciting activities like these ones, … you find that other teachers in your block will complain that your learners are making noise…* (T1, p.5, line10*).*

T2's view was that grade six learners could do critical thinking. She had this to say:

> *Grade 6 learners can be given pictures to analyse or evaluate a certain concept … they can also maybe analyse maps for example, …. They can also be given graphs to try and come up with a conclusion from analysing graphs and evaluate and then that will help them to think critically* (T2, p.12, line10).

It appears that T3 believed that grade six learners could engage in critical thinking, but it should be limited since they are still young. She commented:

> *I think we need to start introducing critical thinking for grade six learners. But it can only be limited because … at their age, … they may not understand and so, ... we want to break it down to them … when you are given something you are able to draw your own conclusions from it, we may not expect it much. … I would suggest that critical thinking be concentrated on much later in the higher grades, instead of introducing it so early for them* (T3,p.18,line10*).*

For T1 and T3, the main challenge in teaching critical thinking is the age level of grade six learners. However, T1 raised class size and the noise level resulting from overcrowding of the class as another constraining issue to the teaching of critical thinking.

Although critical thinking is a complex activity, it should be introduced to lower classes in the schooling system (Bickford, 2013; Seixas & Peck, 2004; Van Sledright, 2004). T1 and T3 in this study expressed reservations regarding learners' ability to engage in critical thinking in grade six Social Sciences. Only T2 believed that grade six Social Sciences learners can engage in critical thinking. T1 and T3's misconceptions about the teaching of critical thinking are consistent with the literature in this study (Lai, 2011; Lipman, 2003; Silva, 2008) in which teachers and other stakeholders misconstrue Piaget's theory on cognitive development as a theory of developmental stages. Research has rebutted such assumptions (Silva, 2008). Furthermore, Bailin et al. (1999b) and Gelerstein et al. (2016) argue that the appropriate time for the introduction of critical thinking was in primary education. Age does not preclude the ability to think critically. The role of the teacher is to select age- appropriate teaching and assessment strategies (Bickford, 2004).

The participants in this study had different opinions on whether the teaching of critical thinking should be subject-specific or generic skill approach. I identified the opinions as a sub-theme of participants' perceptions and experiences of teaching critical thinking.

T1 explained that critical thinking was essential in History:

> *… Social Sciences …, requires a whole lot of critical thinking because it is all about, debating and discussing issues. So especially in history it is very, very essential. In Geography not as much, but still required as well. Mmm, but it should be generic, mmm in a sense that there will always be issues to think and debate about in every subject* (T1, p.6, line11).

On the other hand, T2 commented:

> *…basically critical thinking is supposed to be taught across the board because the children need to be critical thinkers whether in Maths, Social Sciences , Natural Sciences or whatever subject. So it cannot be subject-specific. If it becomes subject-specific when it is a certain concept that is being taught but they do need to be taught critical thinking across the board* (T2, p.13, line11).

Both T1 and T2 contradicted themselves as to whether critical thinking is subject-specific or generic skill approach. T2 indicated that critical thinking should be taught in all subjects but also said it could not be subject-specific. T2's response reflected that she did not have a firm position on whether critical thinking is subject-specific or a generic approach. T1 seemed to believe that critical thinking is subject-specific and be taught in Social Sciences but also argued that critical thinking should be generic. For him, critical thinking is more explicit in the teaching of History than in Geography.

T3 took a firm position and commented:

> …I *think it is a generic skill. It is something that does not necessarily apply to a particular subject only. It is something that applies to life in general. Any situation that a person has to be put in, they should be able to evaluate it, they should be able to analyse it. They should be able to say ok, I do not see eye to eye with this point. So, they should be able to debate or summarise a situation. So I do not think it is something that is subject-specific* (T3, p.18, line11).

T1's explanation suggested that critical thinking is subject-specific. T2 said that thinking must be taught in every school subject; be it Maths, Natural Sciences or Social Sciences - as subject-specific. Her stance is supported by the literature (Bailin et al., 1999b; Willingham, 2008). Willingham argues that critical thinking skills are dependent on the subject matter and as such cannot be easily transferred across subjects since thought processes are linked to what is being thought about. T2's stance is supported by Case (2005), who calls for curriculum-embedded approach and intellectual tools for the enhancement and promotion of critical thinking. Only T3 maintained that critical thinking is a generic skill - a view supported by the literature (Halpern, 1998).Teachers' views reflected the debate between two schools of thought in the literature.

T1 had good experience of teaching critical thinking in History. This was evident when he stated that:

> *… When I was teaching democracy, we did have debates in the classroom and as well in terms of the projects. They have a project …where they have to do research about freedom fighters. I encouraged them to go out there and do research and … read out information and actually, present in a way that shows that there is some sense of understanding. The problem with learners is that they just go there, open information on the internet and then come back and read the poster for the class. So they present whatever they present and learners …ask questions …that will test their understanding on issues as well. I got them to debate about the current issues that are happening. It was very, very interesting and they were participating. It is interesting to see grade six learners being interested in politics* (T1, p.7, line14).

T1 demonstrated confidence in teaching critical thinking in History. His response reflected constructivist learning theory and on group work and research as a teaching method.

Although T2 used critical thinking in History, she had mixed feelings about the feedback she got from learners. She felt that learners' ability to do critical thinking had to do with their cognitive development. She said:

> *… I have used critical thinking skills in History. And it worked well with a few learners. Most of the learners, they struggle with critical thinking skills. They cannot really answer especially questions from a higher-level. Meaning that their critical thinking skills may be, are not well developed. Which I think maybe we must start to develop at a lower-level to encourage critical thinking to the learners* (T2, p.13, line14.).

T2 seemed to suggest that critical thinking must be taught to younger children because they need support in developing it.

Like T1, T3 had no problems teaching History. T3 confirmed having used critical thinking in History:

> *… I use a lot of debate in my class because I find that is where I get an opportunity to get what the children are thinking. And also, to get a little view of whether they just take information as they read it, or they actually question certain things. So, I used debate a lot, but sometimes I provide them with a graph and say, can you provide the information or summarize the information in graph or provide them with pictures and say can you explain what is going on. …. Slavery for example, we provide them with pictures that show different stages of slavery and then you want them to put together a paragraph that explains what could have happened and how slavery could have been prevented if things have been done differently.* (T3, p19, line14).

T3's experiences of teaching critical thinking are congruent with historical thinking. According to literature in this study, it is important to expose learners to historical thinking (Barton & Levstik, 2003; Martell, 2013; Seixas, 2006). By asking learners to write a paragraph to explain what happened and how slavery could have been avoided, T3 exposed learners to the highest cognitive level which is 'create'. I concluded that participants are conversant with strategies and approaches for enhancing critical thinking in History.

Not all the participants in the study had used critical thinking activities in Geography. This was evident when T1 stated that:

> *In Geography… when we start discussing population, there is a whole lot of issues to deal with, population around the world, ... why certain provinces are overpopulated and other problems. …We start discussing about the issues of unemployment, and employment in certain areas, and what is attracting people in certain areas. … you can then get learners to think critically. But in terms of map work, I wouldn't know how to go about* (T1, p.8, line15).

T2 had tried using critical thinking and it had worked. She confirmed:

> *I have used it. And I think it worked well to a certain extent. It is mainly use of graphs and maybe interpreting maps. And some children find it ok… Most children find it challenging. They cannot think at a critical level* (T2, p14, line 15).

T3 also explained that critical thinking works well in her class. She said:

> *I do, and funny enough (with a smile), I did not realize that this is what I do all the time. We look at an example of a topic like climate. We present climate as climate maps or tables or graphs and we expect children to analyse those. So, that is an example of where we use critical thinking. Even when you assess them, you can present the information in the form of a graph and let them answer questions based on the graph provided. So, this worked so well* (T3, p.20, line 15).

Geography presented challenges for teaching critical thinking for T1 as he could only see opportunities for critical thinking in some Geography topics. It is the responsibility of the teacher to induct learners in knowledge with powerful ways to analyse, explain and knowledge which exposes learners to debates (Maude, 2016). According to Rusznyak (2017) teachers need to demonstrate a strong knowledge of the subject to create learning experiences that develop geographical ways of thinking following the specified curriculum.

Teachers held varied definitions of critical thinking, views about the age at which it should be introduced to learners, and whether it is a generic skill approach or subject-specific. They reported difficulties with language proficiency, opportunities for teaching critical thinking in Geography and History disciplines and pedagogy.

Participants presented two broad definitions of critical thinking, namely; using background knowledge and making judgments. T1 and T2 maintained that grade six learners couldn't engage in critical thinking. Teachers maintained that grade six learners' inability to engage in critical thinking was linked to their learning through the medium of English which is not the learners' first language. Participants knew teaching strategies that enhance the teaching of critical thinking such as group work and debates. Nevertheless, they did not think the teaching of critical thinking was possible through the use of age-appropriate pedagogical, instructional and assessment approaches.

Teachers' responses on whether critical thinking is generic or subject-specific reflect contestation of critical thinking presented in the literature review. Not all participants perceived opportunities for teaching critical thinking in all disciplines. Although T1 saw opportunities for teaching critical thinking in History, he maintained that it was difficult to teach critical thinking in many of the topics in Geography. This challenge could be attributed to the teacher's lack of specialisation in the discipline.

4.2.2 Theme 2: The role of SMT in managing quality teaching and assessment in the school.

Participants believed that school management plays a fundamental role in encouraging teachers to teach for critical thinking. This was evident when T1 asserted:

> *…schools can encourage others to teach critical thinking … finding new resources. I think as a teacher, you are always learning every single day with the news bring any new things that are coming out and always be open to discussing and debating with other colleagues as well, … you are able to learn from other colleagues a lot. So if you can work in pairs or in a grade, we share a subject …teachers can discuss issues related to the subject so that they can actually discover challenges with regard to the subject and then how they can show each other how they can go about teaching critical thinking in our own subject* (T1, p.1.line 3).

T1 could see the significance of teachers working together in the school as well as in a particular grade to promote the teaching of critical thinking. His view resonates with the principle of professional learning communities (PLC), whereby teachers develop collegiality and share good practice.

T2 also believed that school management could promote the teaching of critical thinking. She said:

> *Schools can … encourage teachers to use various teaching methods, and incorporate videos, pictures in their teaching …if they do have the resources and they can also make sure that teachers use higher-order questions through maybe doing some staff development on critical thinking skills* (T2,p.11, line 3).

For T2, the role of school management should be to prioritise teaching strategies in pursuit of critical thinking through resources and their teacher development programme.

T3 argued that schools can promote critical thinking by allowing teachers to be creative in their teaching:

> *… Teachers should be allowed to be creative, allow them to use …, modern-day examples; the real-life examples that children go through, for example to demonstrate that for every story there are two sides. So that when they are given a scenario, they are able to think: but what could have driven the scenario to be what it is? What could be the other side to the scenario? So allowing teachers to not only stick to what is in the book* (T3, p.16, line 3).

Participants agreed that school management has a fundamental role in the promotion of critical thinking in their respective schools. T1 and T2 emphasised the significance of teacher development programmes whilst T3 emphasised the importance of allowing teachers to be creative in teaching critical thinking. Only one school promoted critical thinking efficiently. T1 expressed misgivings about the SMT in his school:

> *… It is not a main focus. I think as management it is just a matter of doing what it is expected of them in terms of delivery of the curriculum and all of that. I don't think there is that much focus (on) teaching critical thinking to ...So it is just a matter the assessment per se, maybe there would be those questions that might challenge the learners but then there would be very few of those…*(T1, p.2, line 4).

According to T2, her school management prioritised the teaching of critical thinking. She asserted that:

> *Our school does emphasize the teaching of critical thinking. They make sure that all teachers include critical thinking in their assessments. The school has curriculum management systems flowing from the subject head to the head of department (HOD). The pre-moderation and post- moderation process, start with the subject head who then submits test papers and her reports to the HOD for further scrutiny* (T2, p.11, line 4).

Although T1 recognised the role of SMT in promoting critical thinking, he believed that the SMT in his school did not prioritise the teaching of critical thinking. The difference in the operations of SMTs between T1's and T2's schools is evident in the process taken in moderation of tasks.

According to T3, the HOD emphasised the importance of using various methods of teaching and assessment. She had this to say:

> *Teachers are allowed to use creative skills to assist learning. Some of the assessments are not necessarily based on writing. Assessment can involve role-play. Children are role-playing the topic in question and they can be assessed based on their performance of what they understand or how they understand the topic. So, not all assessments are based on written information or memory recall. So we let children actually present information in the way they understand it and we assess that* (T3, p.16, line 4).

T3 was creative in teaching critical thinking. She had various ways of teaching and assessing critical thinking. Not all schools had established subject-specific structures where the importance of critical thinking could be addressed or prioritised for quality teaching and learning. Overall there was variation in the quality of SMTs and that their roles were not related to enhancing critical thinking.

4.2.3 Theme 3: Teachers' interpretation of intended curriculum and policy

The successful enhancement of critical thinking lies in how teachers interpret the curriculum. All participants believed that CAPS provided opportunities for teaching critical thinking, but some could only see the opportunities of critical thinking in only one discipline of Social Sciences subject. This conclusion was informed by T1's response when he said:

> *I don't know if one can apply the strategy of teaching critical thinking in Geography. ... Geography requires more straight forward answers in a sense that you know the calculation of distance, the answer has to be the same ... example, mmm, there is map work and all of that …* (T1, p.2, line 5).

T1 saw opportunities to teach critical thinking in Geography. T2 pointed out that CAPS emphasises that teachers' assessments must enhance critical thinking. She commented:

> *The CAPS document encourages critical thinking through the use of the Bloom's taxonomy that all questions in assessment should have the various levels there, so that the children are encouraged to think critically* (T2, p.11, line 5).

T2's response represented an interesting contrast to that of T1 regarding content and assessment. T3 started by raising concern about the amount of content that learners have to learn:

> *…There is too much information in CAPS and that the children are not in the correct age to learn. So that takes up the time that we could be teaching them skills on how to analyse information and how to evaluate situations. ....on the other hand, CAPS allows teachers to use the various ways of processing information not just regurgitate or give back what they have been given. Allowing people to say, ok this is how I see a picture that is presented to me. This is how I interpret the graph…* (T3, p.16, line 5).

T3 believed that although critical thinking could be part of the intended curriculum, the amount of prescribed content is problematic. T3's concern is consistent with the literature which show that teachers prioritise completion of content at the expense of teaching learners critical thinking (Duron et al., 2006). She saw critical thinking as a generic skill and seemed to suggest that she did not think that critical thinking skills should be incorporated in her teaching. The teaching of critical thinking is compromised by teachers' concern on curriculum pacing and coverage (Barton & Levstik, 2003). For learners to operate at the higher levels of the Bloom's taxonomy, teachers must create opportunities for that to happen.

It was evident from the participants that they had difficulty interpreting the weighting of cognitive levels in Social Sciences[18]. Some participants gave reasons for not adhering to policy prescriptions. T1 had this to say,

> *I am not sure about policy prescription on weighting of different cognitive levels in Social Sciences. …. But what I know is that learners must write the Geography paper out of forty marks and also forty marks for the History part. Well, as to how many marks, overall, will address higher-order thinking skills, I*

[18] Social Sciences CAPS (2011) classifies the cognitive skills as follows: low order (knowledge and recall); middle order (comprehension and application) and higher order (analysis, evaluation and synthesis). Weighting is 30% for low order, 50% for middle order and 20% for higher order thinking skills.

> *am not sure. I just choose which question I can make more demanding for learners. But of course, I always make sure that lower-order questions are allocated only one mark and middle and higher-order questions will have two marks respectively* (T1, p.3, line 6).

The Geography task analysed in the study showed that T1 did not follow the policy in which twenty-per-cent should count for higher-order thinking skills. T2 was the only participant who was able to explain weighting of cognitive skills.

She said that:

> *…It states that lower-order questions must be allocated fifty-per-cent, middle-order must be thirty-per-cent and higher-order must be twenty-per-cent. But to be honest with you, I do not necessarily follow it exactly. What I make sure is that there are at least some difficult questions. You must remember that if you put more difficult questions, you run the risk of having many learners failing at the end of the term* (T2, p.12, line 6).

T3 commented:

> *I cannot remember off my head. I always mix different levels of questions which demand learners to think critically. I do not necessarily follow it, for obvious reasons. They will fail. Most of them are struggling with critical thinking* (T3, p.17, line 6).

All participants justified their disregard for policy to protect themselves from authorities who may want to know why learners are failing. Participants prioritised learners' performance over learning. Despite this participants indicated that they are always guided by the policy about planning their teaching and assessment of critical thinking. T1 had this to say;

> *When you plan a lesson there needs to be sort of like a structure as in what are you aiming to teach in that lesson, and what skill are you planning to teach the learners on that day. And it has to go hand in hand with; content knowledge has to go hand in hand with the skills that you aim to teach to learners as well. .... Then you don't get to waste time in class.* (T1, p. 9, line 20).

T2 concurred that she was guided by the specific aims and content knowledge in promoting critical thinking. She argued:

> *when I'm doing my lesson plans, I always try and link the aims to the content that I am going to teach and after teaching, I always go back and see if I managed to achieve whatever I intended to achieve. ...when I am setting my assessment tasks, I make sure I go back to check my content in relation to the aims of that particular topic and see if I covered that* (T2,p. 15, line 20).

T3 echoed what T1 and T2 said:

> *I think so, it is very important. One, every lesson that I prepare, I make sure to understand the content myself. I am not an expert and I do not believe there will ever be a time where I am an expert in any particular knowledge. ... We keep learning. Then make sure that I can link that knowledge to what is it that I want children to get from it. So, it has to be linked to the aims for the particular lesson* (T3, p.21, line 20).

Both participants agree that critical thinking is part of the aims of teaching Social Sciences. CAPS (2011) expects teachers to integrate content with subject aims and skills. Participants had an understanding of the relationship between specific aims, content and the teaching of critical thinking. The analysis of participant's formal assessment tasks will explore the extent to which this understanding is enacted.

4.2.4 Theme 4: The enacted curriculum

Participants demonstrated an understanding that critical thinking depends on teaching approaches and teachers' disposition. T1 had this to say;

> *I think for me for an individual to be able to teach critical thinking one needs to be very open-minded, and... knowledgeable as well. And always willing to listen and learn from others as well. ...Critical thinking does not want somebody that feels that they know everything (it) is about challenging each other. You know, as a teacher, allow learners to ask you questions that are going to challenge you.* (T1, p.1, line 2).

T2 indicated that her love for the subject kept her abreast of developments in the subject. She said:

> *I am an inquisitive person and I always try to remain well informed through reading widely about my subject or whatever content I will be teaching. I am also open-minded ... not biased in so many ways* (T2, p.10, line 2).

T3 described herself as a person who liked to engage on matters. She said:

> *I am a very analytical person. I do not take anything that I am just told without thinking about it. ... I believe in making decisions based on facts and ... logic. That is what I would like my learners to be as well* (T3, p.15, line 2).

Knowledge of relevant teaching strategies is important in promoting critical thinking (Alexander, 2008; Alexander, 2015; Barber & Mourshed, 2007; Lewis & Smith, 1993; NDP, 2012; UNICEF, 2000). Participants believed that they have the correct disposition to promote critical thinking. T1 and T2 argued that they were open-minded. T3 believed that she was an analytical person.

Participants also believed that their teaching strategies enhance critical thinking. T1 said:

> *…it was much easier before, we were considered a full-service school[19]. ...we are supposed to take all types of learners... my challenge has always been language. I had to sort of, lower down my language and (use) code- switching. The problem... is that learners have to write in English. ... it becomes a challenge when it comes to them answering a question in an assessment. As a Social Sciences teacher, it is very difficult to focus on the language and then focus on delivering content. … is a challenge when a learner is unable to understand you… .They are not able to ask questions and are not confident enough to answer you when you ask questions that require critical thinking. ... some would actually ask if they can speak in their home languages, because they are not confident enough to express their opinion in English* (T1, p.3, line7).

T1's experience of teaching critical thinking is hampered by learners' inability to understand and express themselves in English. Learners' command of the language of teaching and learning is necessary for the promotion of critical thinking. The way T1 teaches would impact on the way he had to assess learners.

T2 confirmed that her teaching strategies supported critical thinking. She said:

> *I use teaching strategies such as group work, debate and short quiz. In my questioning techniques, I include words such as analyse, describe and evaluate (*T2, p. 12, line 7).

T3 responded that her class is dominated by engaging learners in debates in order for learners to make meaning of what they learned.

> *I try my best. I always remind learners that information can be biased depending on who provided the source. ... They must not just take information as it comes. They must look at both possible sides of the story. ... We allow debate in class. I sometimes give them a topic from the sections that we are doing and say ok, can you give me your view, why do you think this is the situation. And if you were to disagree with the situation, what will be your reasons …* (T3, p. 17, line 7).

Quality teaching and learning takes place when learners and teachers interact (Barber & Mourshed, 2007). Participants demonstrated a partial understanding of relevant teaching methods for enhancing critical thinking in their classrooms. Both participants emphasised debate. T1 noted language as a barrier in his class. T3 emphasised group work and short quiz as teaching strategies.

[19] Full-service school: In terms of Inclusive Education policy (White paper 6 (2001), it is a school which caters for mild and moderate learners in respect of performance.

In this study, participants maintained that their assessment strategies enhance and promote critical thinking. However, they said that not all questions in their assessments address critical thinking. T1 indicated that:

> *We have been discouraged over the years. We find ourselves having to oversimplify everything because we assess; our papers are not too difficult. I like challenging learners. So I have always done so in my teaching and my assessment. …a colleague that I am working with in grade six, for Social Sciences, is also like me and he is struggling to settle in because he sets papers the way I used to set them in the beginning. I used to challenge the learners. ... the sad thing about that is that learners fail with that kind of questioning. ... many of these learners lack background knowledge about issues. They are not encouraged to read* (T1, p. 4, line 8).

T1 is conscious of the fact that the way he taught would inform the way he had to assess. He indicated that his assessments fell short of enhancing critical thinking.

Similarly, T2 also said that her assessments did not always address higher cognitive skills:

> *…When I use higher-order questions most of the learners struggle. And this affects their performance in summative assessment* (T2, p. 12, line 8).

T3 argued that her assessments always address higher thinking skills:

> *Some of the questions are presented as pictures ... they have to say what is happening in the picture and not all the information is presented in the picture. Sometimes I provide them with a passage, and the answers are not necessarily based on the passage as it is and they have to think and deduce information from what they read. I think that requires critical thinking* (T3, p. 17, line 8).

Teachers are expected to design assessments that address the curriculum expectations of the grade. This should be done according to the curriculum objectives (Mulnix, 2010). Unless learners are actively engaged in thinking processes during learning, the chances are that they may not improve their cognitive skills (van Gelder, 2005). Teachers must purposely provide opportunities for learners to practice higher-order thinking skills through real-life problems assessment strategies (Barak et al., 2007). Case (2005) asserts that teachers should problematize the subject content. Of the three participants in this study, only T3 did not express challenges in teaching and assessing critical thinking.

All participants encouraged learners to analyse in their teaching and assessment. T1 said:

> *Analysis will happen when you give them an information text, a graph or a text. But we don't have enough of that … the case studies that we have for our learners are more like comprehension, which does not promote critical thinking. If we can have case studies scenarios, … like this person has been in this situation but still deals with the topic, … get learners to think about what will they do in this kind of situation, … it is challenging for these learners … it (is) interesting to help learners give their opinion and what they think about certain issues* (T1, p. 8, line 16).

T1 had doubts about the quality of resources available for teaching critical thinking. T2 did not raise the issue of quality of resources but explained how she taught learners to analyse:

> *I encourage learners to analyse through the use of higher-order question techniques. I sometimes ask them to evaluate a certain concept, to analyse pictures, to write paragraphs and all that helps them to … think critically* (T2, p. 14, line 16).

T3 discussed the methods she uses to teach critical thinking as follows:

> *if you gradually teach children that whatever is put in front of them, they should always question. Not necessarily question to doubt, but to critique. How do people critique? How did a person arrive at that? …. We have a class discussion, instead of just writing everything. … Children are free to ask me questions or even question or critique what I say myself, and by allowing them the freedom to ask anything, ... it gives them an opportunity to say their views. That allows them to think beyond what is provided to them. Not saying to them, no, this is a fact or I say so* (T3, p.20, line 16).

Participants believed they encourage learners to interpret. T1 stated:

> *Interpretation can be in many ways. …So, in grade six you have to try and direct a learner to a certain situation to say, mmm, because in grade six, learners might struggle in terms of interpreting. … you use pictures... key words as well. ..., they need some guidance, some direction because they can be all over the place and not give you exactly what you want* (T1, p. 8, line 17).

T1 suggested that critical thinking should be taught but that learners need guidance from teachers. T2 and T3 linked the cognitive levels with relevant sources and activities. T2 said:

> *I encourage learners to interpret graphs, especially in Geography. … (and) pictures and then they write paragraphs and that really helps them to sharpen their interpretation skills* (T2, p. 14, line 17).

T3 commented:

> *Give them a picture that they may have not seen before, but that is related for example to the topic under discussion and say to them, what you think is going on in this picture. Can you write a short story or paragraph based on the picture that you see? That will involve anything that they see and … what they think could have been behind, … (T3, p.20, line 17).*

T1 linked the cognitive level with the relevant sources and activities for teaching learners to evaluate. He said:

> ... *perhaps in graph situations,… where they are given graphs, and pie charts and bar graphs.*(T1, p. 9, line 18).

T2 was also able to link the cognitive level with relevant sources and activities. She said:

> *I encourage learners to evaluate by maybe having a small project maybe in groups where they collect data and then after collecting data they can plot graphs and then after that they can actually analyse the information and come up with the conclusion* (T2, p. 14, line 18).

T3 was able to link the cognitive skill and relevant sources and activities. She went further and intergrade cognitive level, sources and content. She said:

> *… topics like climate allow children to quantify things. You give them a graph. It shows the temperatures and the rainfall in a particular area and you say to them, the information could be broken into months and you say, ok, in a year in total, how much rainfall has fallen. That requires them to quantify, so they should be able to provide answers. So, that is part of evaluation in my understanding* (T3, p.20, line 18).

Participants believed that they encourage learners to create. T1 was able to link cognitive level and relevant sources and activities. She said:

> *I think it will be mainly in project situations. I think you give them a task where they have to make something, doing models, …* (T1, p. 9, line 19).

T2 was also able to link cognitive level and relevant sources and activities. Furthermore, she was able to link that with relevant content on the grade. She commented:

> *Creating maybe through drawing, that's how I encourage my learners. They can come with drawings. They can sort of pretend maybe they were leaving in the time of Mapungubwe and maybe, draw something in relations to that. That is creation* (T2, p. 14, line 19).

T3 was also able to link cognitive level and relevant sources and activities. Furthermore, she was able to link that with relevant content on the grade. She said:

> *…. We make our own models, in Geography for example, we make models of the instruments that are used for measuring weather such as thermometers and rain gauges, you know. Making them from the normal everyday material … letting them see how professional or scientific instrument would work, comparing to what they see or what they have made. …History, going back to grade four, bringing any forms of world objects that can come across at home to create a story that they can tell, to make their own museum and with that I always encourage them to find out as much as they can, about the object that they are bringing and be able to tell a story...* (T3, p. 21, line 19).

Participants understood the cognitive levels of Bloom's taxonomy and could suggest relevant sources and activities for assessing critical thinking. Some participants identified content and linked it with the cognitive skill and relevant sources in their discussion. The following table (4.1) represents examples of resources and activities for assessing critical thinking as discussed by participants.

Table 4.1: Link between cognitive levels and resources and activities for assessing critical thinking

	Cognitive level	**Relevant resources and activities for assessing critical thinking**	**Example of content`**
T1	Analyse Interpret	Pictures, graphs, case studies	Not provided
	Evaluate Create	Charts and graphs Projects (models)	
T2	Analyse Interpret	Graphs, pictures, paragraph writing	Not provided
	Evaluate Create	Projects Drawings	Mapungubwe
T3	Analyse Interpret	Pictures, paragraph writing, class discussion, critique	Not provided

	Evaluate Create	Graphs, create models of instruments	Climate and weather, rain gauge, thermometers, historical objects, museum

Participants had different views on whether the textbooks they use provide opportunities for teaching and assessing critical thinking. T1 argued:

> *When it comes to textbooks, ... a lot of these questions don't require critical thinking. Basically, they require learners to get information from the text. It is not a lot of application required ... It is just more asking learners about what they have been taught* (T1, p. 5, line 9).

T2 believed textbooks were helpful in the teaching of critical thinking:

> *Textbooks have various pictures, they have sources, analysing of concepts and so on, (they) help learners to think critically* (T2, p.12, line 9).

Similarly, T3 felt that textbooks provided opportunities for teaching critical thinking:

> *They provide a general guidance on how to analyse information. You don't have to stick (to them) for example; we have the term assessment exemplars. (Which) provide you with possible ways that you could phrase your questions. I think textbooks do allow for critical thinking or assessment strategies* (T3, p. 17, line 9).

Interestingly T1 emphasised the need for technology in enhancing critical thinking. He argued:

> *So, if we can have a kind of learning that is more visual. You know, we do a lot of teaching and showing learners, I think it is much easier if I have a smart board. I just go to google and find a picture about whatever I am doing.... it is much more exciting for the learners today. And I cannot speak about debates and group work. We cannot keep on doing the same thing over and over again. With technology one is then able to be a bit more creative* (T1, p.9, line 21).

Participants' interview responses indicate a substantial understanding of the approaches and activities suitable for promoting critical thinking. The following section will verify and corroborate the interview data.

4.3 DATA FROM FORMAL ASSESSMENT TASKS

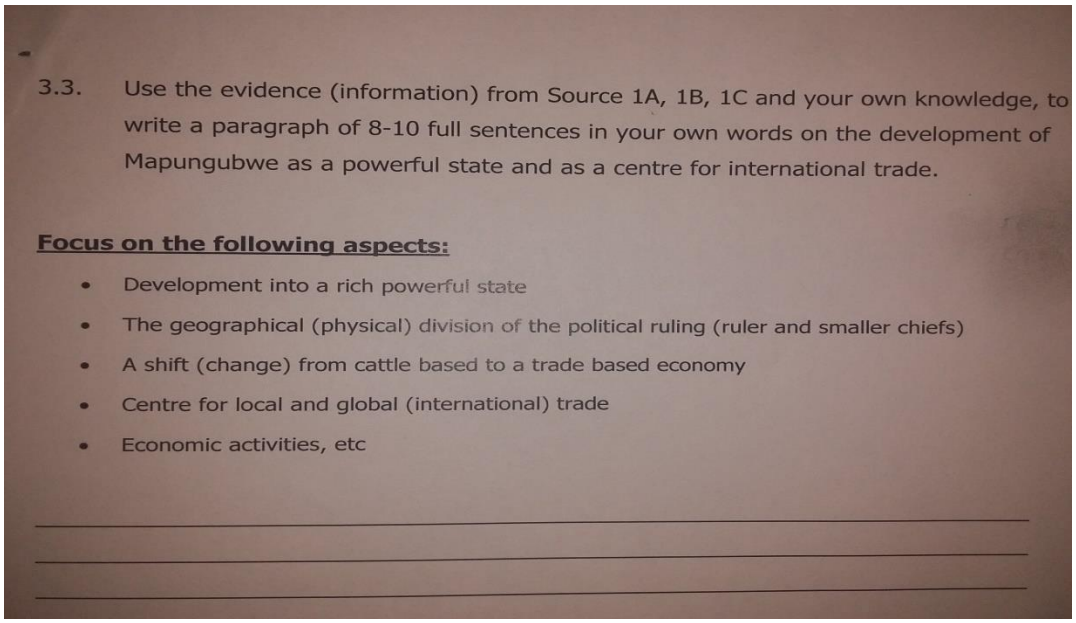
The data presented in this section was derived from the formal assessment tasks set by the participants as summative assessments for term one. They represent a culmination of the teaching and learning process and determine whether a learner has

attained the grade level-outcomes. A complete analysis of all the written tasks is attached (Appendices H - M). Below are samples of different cognitive levels set by each teacher (figures 4.1- 4.5).

I then used the taxonomy table to analyse the weighting of cognitive levels as reflected in the formal assessment tasks (table 4.2). The analysis was done for the History and Geography disciplines of Social Sciences per teacher. All the tasks were analysed in the following section.

4.3.1 Sample of T1's formal assessment task for term one

Figure 4.1: Sample of History high-order question:



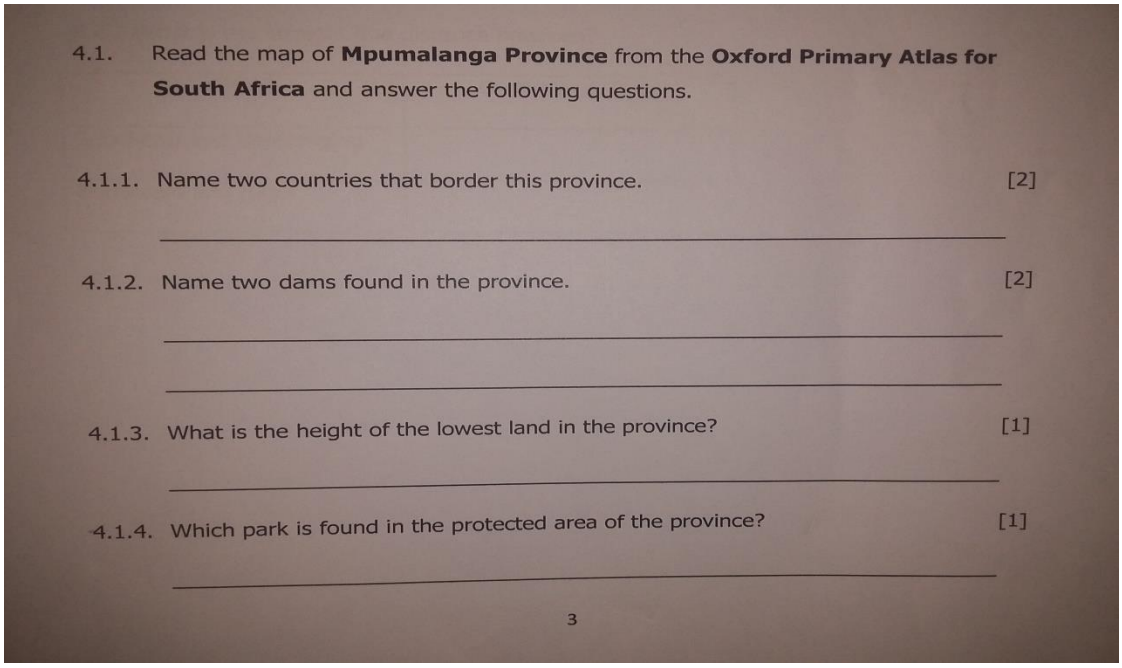
3.3. Use the evidence (information) from Source 1A, 1B, 1C and your own knowledge, to write a paragraph of 8-10 full sentences in your own words on the development of Mapungubwe as a powerful state and as a centre for international trade.

Focus on the following aspects:

- Development into a rich powerful state
- The geographical (physical) division of the political ruling (ruler and smaller chiefs)
- A shift (change) from cattle based to a trade based economy
- Centre for local and global (international) trade
- Economic activities, etc

Figure 4.1 is an example of a History high-order question requiring learners to work with sources to write a paragraph. On Bloom's taxonomy, the question required learners to 'create' a paragraph.

Figure 4.2: Sample of Geography low-order question:



4.1. Read the map of **Mpumalanga Province** from the **Oxford Primary Atlas for South Africa** and answer the following questions.

4.1.1. Name two countries that border this province. [2]

_____

4.1.2. Name two dams found in the province. [2]

_____

_____

4.1.3. What is the height of the lowest land in the province? [1]

_____

4.1.4. Which park is found in the protected area of the province? [1]

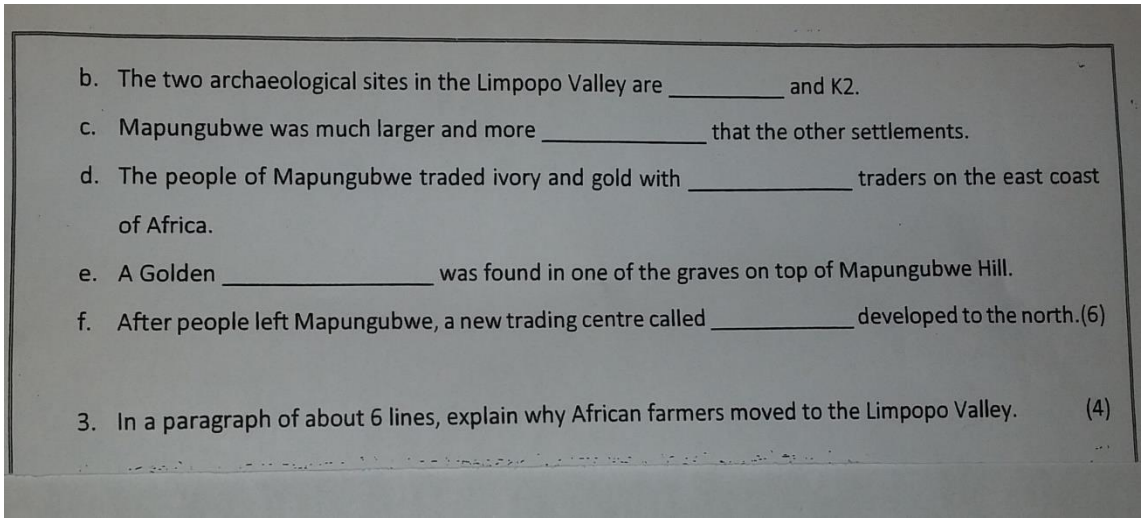
_____

3

Figure 4.2 is an example of a Geography low-order question requiring learners to list and name. These questions were based on map reading.

4.3.2 Sample of T2's formal assessment task for term one

Figure 4.3: Sample of History high-order question.



b. The two archaeological sites in the Limpopo Valley are _____ and K2.

c. Mapungubwe was much larger and more _____ that the other settlements.

d. The people of Mapungubwe traded ivory and gold with _____ traders on the east coast of Africa.

e. A Golden _____ was found in one of the graves on top of Mapungubwe Hill.

f. After people left Mapungubwe, a new trading centre called _____ developed to the north.(6)

3. In a paragraph of about 6 lines, explain why African farmers moved to the Limpopo Valley. (4)

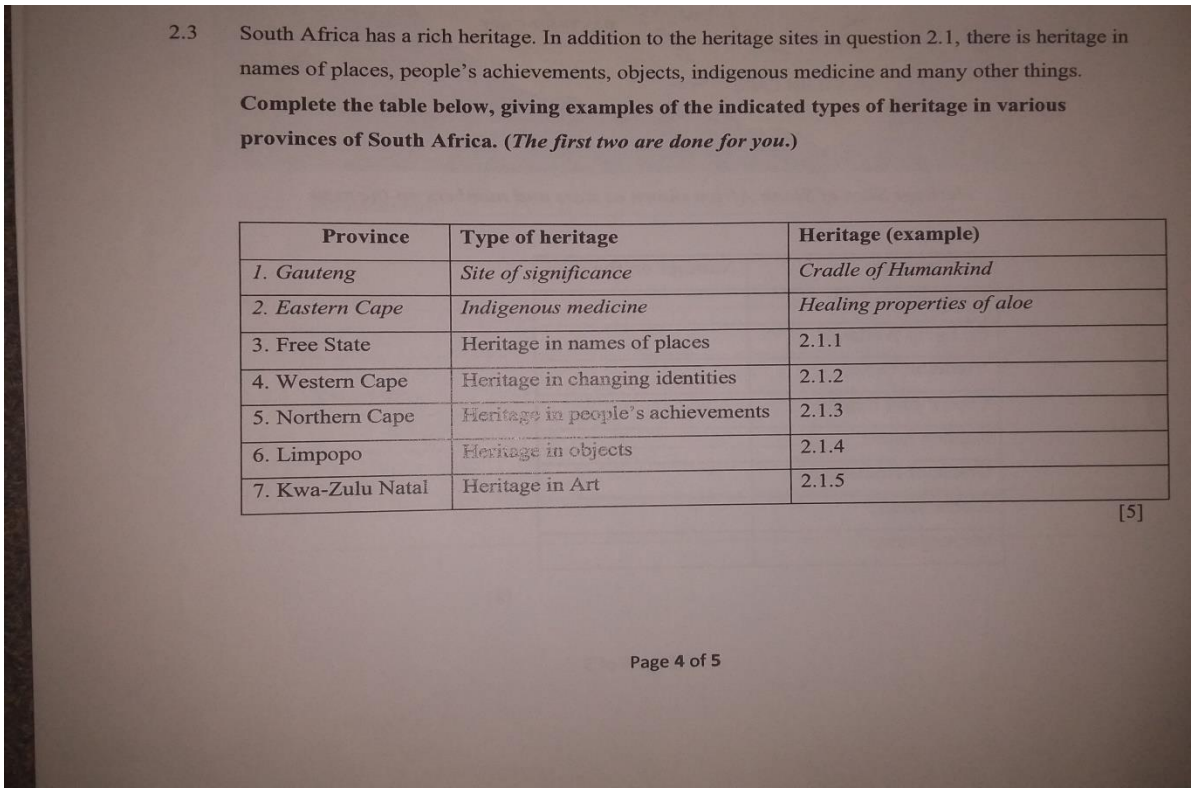
Figure 4.3 is an example of a History high-order question (question 3 only) requiring learners to write a paragraph about African farmers. On Bloom's taxonomy, the question required learners to 'create' a paragraph.

Figure 4.4: Sample of Geography high-order question

Through the analysis of T2's Geography question paper, I could not identify a question requiring high-order thinking skills. This finding is evident in the analysis table (table 4.2).

4.3.3 Sample of T3's formal assessment task for term one

Figure 4.5: Sample of History low-order question:



2.3 South Africa has a rich heritage. In addition to the heritage sites in question 2.1, there is heritage in names of places, people's achievements, objects, indigenous medicine and many other things. **Complete the table below, giving examples of the indicated types of heritage in various provinces of South Africa. (*The first two are done for you.*)**

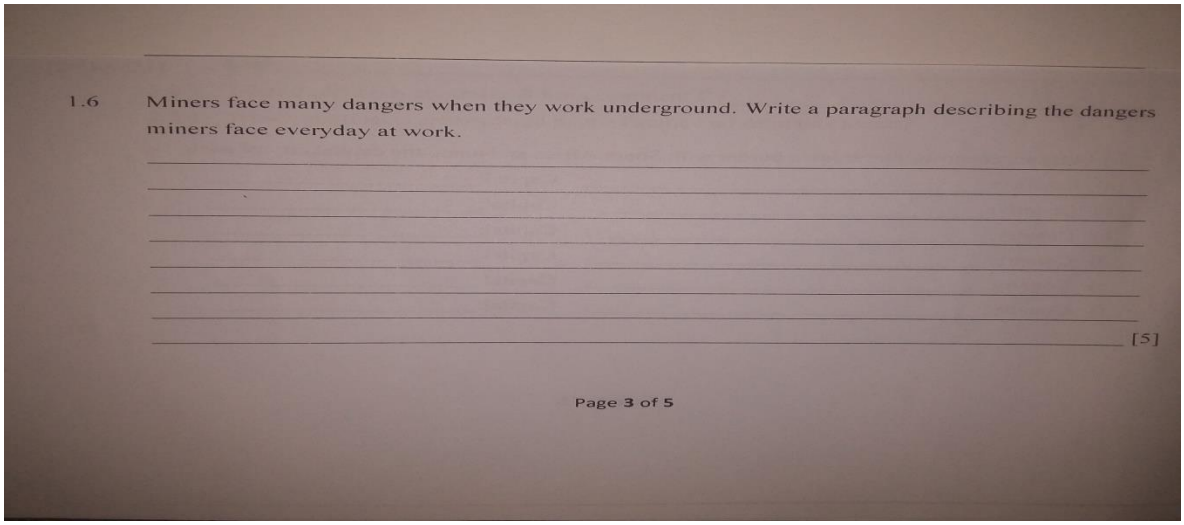
Province	Type of heritage	Heritage (example)
1. Gauteng	*Site of significance*	*Cradle of Humankind*
2. Eastern Cape	*Indigenous medicine*	*Healing properties of aloe*
3. Free State	Heritage in names of places	2.1.1
4. Western Cape	Heritage in changing identities	2.1.2
5. Northern Cape	Heritage in people's achievements	2.1.3
6. Limpopo	Heritage in objects	2.1.4
7. Kwa-Zulu Natal	Heritage in Art	2.1.5

[5]

Page 4 of 5

Figure 4.5 is an example of a History low-order question requiring learners to name heritage sites in South Africa. The question required learners to recall information.

Figure 4.6: Sample of Geography high- order question:



1.6 Miners face many dangers when they work underground. Write a paragraph describing the dangers miners face everyday at work.

[5]

Page 3 of 5

Figure 4.6 is an example of a Geography high-order question requiring learners to write a paragraph. On Bloom's taxonomy, the question required learners to 'create' a paragraph.

The above figures (figures 4.1- 4.6) represent the design of assessment tasks by the three participants in respect of the cognitive dimension and the knowledge dimension of Bloom's taxonomy. It is worth noting that questions were requiring high-order thinking skills in some of the tasks. The following table (table 4.2) represents the weighting of cognitive skills in all the analysed tasks.

Table 4.2: Representation of the summary reflecting the weighting of cognitive skills emerging from participants' formal assessment tasks.

	Cognitive levels	**Lower-order**	**Middle-order**	**Higher-order**	**TOTAL %**
		Remember Understand	Apply Analyse	Evaluate Create	
	% Prescription per SS policy	**30**	**50**	**20**	**100**
	Subject				
T1	History	47.5	27.5	25	100
	Geography	70	30	0	100
T2	History	58	22	20	100
	Geography	68	32	0	100
T3	History	74	26	0	100
	Geography	65	24	11	100

The data in the figures (figures 4.1- 4.6) suggests that teachers did assess the prescribed aims and skills of each discipline respectively. The interviews revealed that teachers understood the importance of critical thinking in Social Sciences and maintained that their teaching strategies enhance critical thinking. However, the analysis of the formal assessments (table 4.2) shows that their assessment did not assess critical thinking effectively. The assessment of low order skills in both Geography and History exceeded the prescribed weighting in CAPS, with the highest being T3's History paper which recorded seventy-four per-cent. The weighting of higher cognitive skills for both Geography and History was lower than policy prescription, except T1's History which was five- per-cent above the requirement. T1 and T2's Geography tasks did not assess higher-order skills, whilst T3's task did not assess higher-order skills in History. In respect of assessing middle-order cognitive skills, both the History and Geography tasks were weighted less than fifty-per-cent. T2's History paper recorded twenty-two per-cent.

The above analysis shows a disconnection between teachers' beliefs and their practices (Martell, 2013). Comparing the teachers within and across schools shows that there is no link between the teaching of critical thinking and the socio-economic context of the schools in this study and that the teaching of critical thinking within the same school is not consistent across the subject disciplines.

The analysis of subject types of knowledge assessed shows a stronger use and focus on factual knowledge at the expense of conceptual and procedural knowledge in all the tasks set (Appendices H - M).

The analysis confirms the interview findings that the HODs did not insist that teachers assess higher-order skills when moderating papers, but confirms participants' fears that learners will fail on higher-order assessment tasks along with their reservations about grade six learners' ability to engage in critical thinking.

Despite participants being highly qualified (see table 3.2: Biographical information) and their vast teaching experience in teaching Social Sciences in grade six, there was no connection between the quality of teaching and their assessing for critical thinking. The data, however, suggests that the teaching of critical thinking varies across subject disciplines, suggesting that teachers are not equally strong in the two disciplines that make up Social Sciences.

In a nutshell, this study found that although data suggests that participants included critical thinking in their teaching strategies the analysis of formal assessment tasks revealed that the level of difficulty was skewed towards lower-order thinking skills.

4.4 DISCUSSION

In this study, four themes emerged from the interviews conducted with the three participants. The themes are perceptions and experiences of Social Sciences teachers, the role of SMT in managing quality teaching and assessment in the school, teachers' interpretation of intended curriculum and policy and the enacted curriculum.

The findings in this study showed that participants partially understand what the teaching of critical thinking entails. They have partial knowledge of the requisite teaching strategies and requisite assessment strategies that can promote critical thinking. Some of the participants maintained that grade six learners could not engage

in critical thinking or that it should be introduced at a much later time in education. The analysis of formal tasks showed that the assessments administered in Social Sciences did not enhance critical thinking.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

In this chapter, I conclude by providing a summary of the main findings relating to the literature on the teaching and assessment of critical thinking in Social Sciences. This is followed by a discussion on the significance of the study and recommendations for further research.

5.1 OVERVIEW OF THE STUDY

The aim of the study was to explore perceptions and experiences of primary school teachers in teaching and assessing critical thinking in grade six Social Sciences. Chapter one highlighted the research problem and lack of studies reflecting South African teachers' perceptions and experiences of teaching critical thinking in Social Sciences. Many studies focused on learners' performance on standardized tests (grade 12 National Senior Certificate) and little on teachers' pedagogy and assessment practices.

Chapter two discussed challenges to the enhancement of critical thinking; which include misconceptions about critical thinking and integration of the Geography and History disciplines into Social Sciences. The chapter also discussed what constitutes thinking in Social Sciences and the conceptual framework underpinning the study. Chapter three explained the methodology used to gather relevant data in order to answer the research questions. Participants' extensive experience helped answer the research questions. Interviews provided an opportunity to listen to participants' voices and gain insight into their views. Analysis of tasks was done using the taxonomy table (Anderson et al., 2001). Task analysis provided an opportunity to explore participants' practices regarding assessing critical thinking.

I formulated appropriate interview questions about teachers' understanding of teaching and assessing critical thinking in Social Sciences. The following section presents the research questions of the study and summary of the research findings.

The critical research question in the study was:

What are teachers' perceptions and experiences of teaching critical thinking?

Of the three participants in the study, only one believed that grade six learners could engage in critical thinking. One teacher believed that the success of teaching critical thinking was affected by learners' inability to express themselves in English, overcrowding, learners' lack of self-confidence in debates and discussions and their lack of background knowledge on issues under discussions in class.

Some of the challenges may emanate from teachers' poor pedagogical strategies in teaching and assessing critical thinking in the subject and not using the weighting of cognitive skills appropriately in ways that influence quality teaching and learning negatively.

Two of the three participants found that the textbooks they used could support the teaching of critical thinking. Meanwhile, one of the participants felt that too much prescribed content in grade six hindered teaching critical thinking. This issue is linked to the pacing and coverage of the prescribed curriculum of grade six and it did not seem to be a challenge for the other two teachers.

In this study, two participants saw critical thinking as subject-specific and believed it should be taught in Social Sciences. One participant maintained that critical thinking is a generic skill. All participants had experienced using critical thinking in History. One participant used strategies such as debates, projects and research which involved learners presenting research and project activities that formed the basis of class discussion. A second teacher included interpretation of pictures, paragraph writing and summarizing information. One of the teachers attributed poor critical thinking to difficulties in learners' cognitive development and readiness. The teacher's view was in contrast with Bailin et al. (1999b) and Case's (2005) argument that teaching for critical thinking includes developing 'important habits of mind', including seeking reason and open-mindedness.

Similarly, all three participants had used critical thinking activities in Geography. One teacher found it difficult to use map work to teach critical thinking. A second teacher asserted that most learners find the use of graphs and interpretation of maps very challenging. Conversely, the third teacher reported using maps tables and graphs successfully. This finding suggests that critical thinking relies on teacher knowledge, subject specialisation and subject-specific approaches toward critical thinking.

All the participants said that schools can play a fundamental role in encouraging teachers to teach for critical thinking by working together to share ideas for teaching critical thinking, encouraging the use of various teaching methods and resources and engaging in staff development that promotes creative teaching.

Not all schools or SMT's promoted the teaching of critical thinking. They did not view critical thinking as a central issue in teaching and learning. One HOD emphasised critical thinking by encouraging teachers to use various teaching methods and supported a wider range of assessment styles including role-playing and presentations.

How do grade six teachers understand critical thinking in Social Sciences?

Overall the findings of this study indicated that participants understood what is meant by critical thinking. They used words consistent with Bloom's taxonomy of cognitive skills such as 'applying', 'analysing', 'evaluating', 'judgment' to characterise and define critical thinking.

Participants were also clear about the types of activities and interactions which enhanced and promoted critical thinking. They mentioned activities such as group work, presentations, and debates.

How do teachers' understandings of critical thinking influence their pedagogical/instructional and assessment choices?

Although participants in this study reported that CAPS document for Social Sciences provided opportunities for the teaching of critical thinking, they did not see how teaching or assessing critical thinking could be used in all subjects or topics.

Some teachers said that Bloom's taxonomy of cognitive skills helped learners to process information rather than learning by regurgitation. Despite this, teachers felt uncomfortable to follow the weighting of cognitive levels prescribed in the Social Sciences policy for fear that learners would fail. The analysis of formal assessment tasks using the taxonomy table showed that although participants maintained that their teaching and assessment strategies promoted critical thinking in grade six Social

Sciences, the level of thinking was skewed towards lower-order thinking skills. The dominant questions used words such as name, list, match and state. The majority of questions addressed factual knowledge. There were few questions addressing conceptual and procedural knowledge and no questions addressed meta-cognitive knowledge.

Although participants discussed how their lesson planning aligned content knowledge with the general and specific aims of the subject disciplines including critical thinking, their formal assessment tasks in both disciplines emphasised lower- order skills.

Participants saw teachers' dispositions as fundamental to teaching critical thinking. One teacher argued that being someone who does not take everything that she is told and making decisions based on available facts assists her in teaching critical thinking. Other teachers emphasised the importance of open-mindedness.

Participants believed that their teaching strategies promoted critical thinking in grade six Social Sciences. Despite this, teachers identified several challenges that constrained the teaching of critical thinking such as the need to code-switch as learners struggled to express their thinking in English. Although teachers were conscious of the need to use assessment to promote critical thinking they were disinclined to do so; and that there was too much content to be covered and that most of the learners would fail the assessment. One teacher cited learners' lack of background knowledge and learners' lack of interest in reading as contributing factors. Not all participants found textbooks helpful in promoting critical thinking. One teacher said that sources in the textbooks simply required learners to extract information from text; suggesting that the questions mainly address low-order cognitive skills. Teaching strategies that promoted critical thinking included group work, short quizzes, debates, asking learners for their views on issues providing reasons for agreeing or disagreeing with a view and helping learners to identify bias when analysing sources.

5.2 SIGNIFICANCE OF THE STUDY

In this study, I was interested in understanding if SMTs and teachers prioritise the teaching and assessment of critical thinking. Moreover, I was interested in exploring teachers' interpretation of the intended curriculum and policy as well as teachers' instructional practices. It was evident from the findings of the study that teachers do not assess for critical thinking. Some SMTs do not engage teachers' understanding of critical thinking and place accountability pressures on teachers. Consequently, teachers do not design high quality assessments since schools are held accountable through their learner performance. The findings suggest that the marks recorded and used for analysis of learner performance by schools and districts do not reflect quality learning or critical thinking. Teachers are measuring low level skills and therefore what schools and districts consider success is not necessarily quality. This suggests that performance accountability had undesirable consequences in assessing for critical thinking. The figures (5.1 and 5.2) below are an attempt to represent implications of performance accountability in assessing critical thinking in schools.

Figure 5.1: Assessing for accountability:

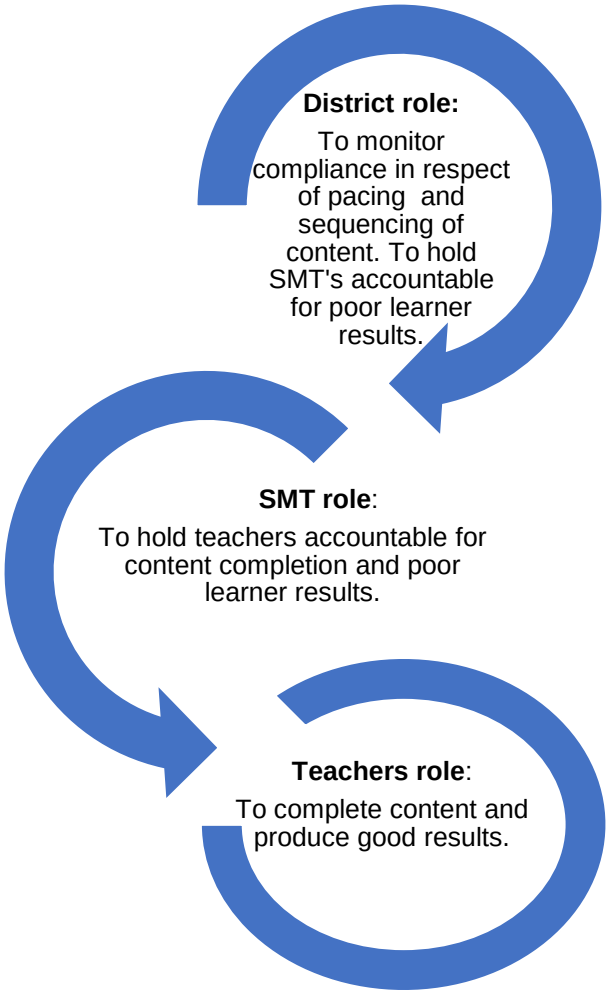
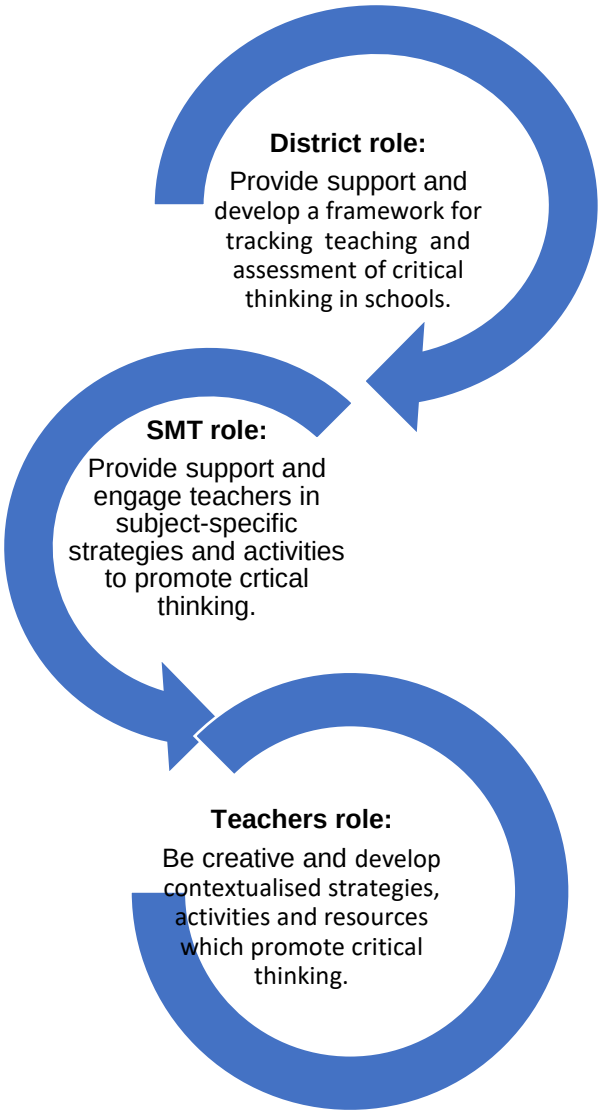

District role:
To monitor compliance in respect of pacing and sequencing of content. To hold SMT's accountable for poor learner results.
SMT role:
To hold teachers accountable for content completion and poor learner results.
Teachers role:
To complete content and produce good results.

Figure 5.2: Assessing for promoting critical thinking:



5.2.1 REFLECTIONS ON THE STUDY

There is little data reflecting teachers' practices in teaching and assessing critical thinking in Social Sciences. This study identified some limitations of the research methodology: its focus on only three participants, all of whom are based in the Gauteng province and only one of the three participants had undergone CAPS training. I did not observe teachers' practices to confirm their claims that their teaching strategies promote critical thinking, except to rely on the interview responses. Furthermore, I don't know the views of district and SMT members regarding the teaching of critical thinking. This may affect the generalization of the findings since case study research

identifies the nature of issues but cannot make claims about the extent to which these are present in broader contexts. The fact that I have used a range of contexts in the study suggests that the findings may be applicable across different types of schools, but still needs to be confirmed by quantitative studies.

Despite the shortcomings identified above, the analysis of formal assessment tasks shed vital information on the quality of teaching and assessment of critical thinking in the participating schools. The findings emanating from interview responses and analysis of tasks showed the disconnection between teachers' beliefs and the enacted curriculum. The study provided me as a researcher, an understanding of the complexities involved regarding the promotion of critical thinking in primary school Social Sciences and therefore an interest to pursue the study further.

5.2.2 IMPLICATIONS FOR FURTHER STUDY

Findings in this study indicate that there is a need to conduct further research in the teaching and assessment of critical thinking in Social Sciences.
There is a need to broaden research methodology and design to focus on a bigger group of schools and teachers including some other districts. There is also a need to observe participants in practice. It is also imperative to give voice to SMT members and district officials involved in teaching and assessment.

This section focuses on some implications and recommendations for schools and district offices.

5.2.2.1 Implications for schools

The findings indicate that teachers have a partial understanding of pedagogical and assessment strategies for enhancing critical thinking. It was also evident from what participants said and the analysis of tasks that some HODs do not use moderation processes to ensure quality assessment of critical thinking.

The above findings highlight the importance of schools and districts to prioritise the teaching and assessment for critical thinking. This could be done by striking a balance between teaching and assessing for performance as well as teaching and assessing for learning. It is important to discuss the concepts of subject-specific and generic skill

approach and relevant teaching and assessment strategies in the teaching of critical thinking. Lack of teacher knowledge on these concepts may undermine their teaching and assessing of critical thinking. Although participants were highly qualified and experienced, their profiles revealed lack of subject specialisation in the subject disciplines. The design of appropriate questions to promote critical thinking was lacking in the tasks. Some teachers need support in using sources for teaching and assessment of critical thinking.

5.2.2.2 Implications for district offices

Participants in this study justified their disregard of the weighting of cognitive skills in Social Sciences policy; for fear of accountability implications if their learners performed poorly. The unintended consequence of accountability practices in schools is that teachers tend to prioritise learners' performance over quality learning or critical thinking. The relationship between schools and district offices should support the promotion of critical thinking.

District offices analyse subject performance at the end of each term for all primary schools in their jurisdiction. The findings are used to evaluate whether schools are underperforming or not. Since these results are not based on standardized tests, the categorizations of schools as underperforming is based on unreliable data that does not assess higher-order thinking. Analysing subject performance may not be the most appropriate instrument to evaluate and compare schools. The analysis of schools' performance results on different tests and examinations does not shed any light on quality teaching and learning or critical thinking. This study argues that where there are no standardized tests (like in grade six), the analysis of formal assessment tasks may illuminate the teaching and assessment of critical thinking in primary schools and provide schools with insights into teaching and assessing for critical thinking. Therefore, as a support measure district offices should develop a reliable framework that could assist teachers and HOD's to measure the quality of teaching and assessing for critical thinking. Such a framework may support schools in enhancing critical thinking, thereby ensuring that the results that are analysed are of quality.

5.3 CONCLUSIONS

This study explored teachers' perceptions and experiences in teaching and assessing critical thinking in grade six Social Sciences. Although participants showed a partial understanding of relevant teaching strategies, analysis of formal assessment tasks revealed a lack of quality in promoting critical thinking despite the weighting of cognitive skills required by policy. Apart from participants' misconception about critical thinking, participants believed accountability measures in schools was the main hindrance to assessing for critical thinking. Teachers and schools are held accountable for content completion and poor results at the expense of quality teaching and assessment.

The findings suggest the need to provide support to teachers in promoting assessment for critical thinking. This could be achieved through focused teacher development programmes. Teachers and HODs should explore appropriate subject-specific and age-appropriate instructional and assessment strategies for promoting critical thinking. District offices should balance content pacing and coverage, and quality assessments that promote critical thinking. District offices should also consider developing a framework for tracking the teaching and assessment of critical thinking in schools.

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APPENDICES

APPENDIX A: PERMISSION FROM WITS ETHICS COMMITTEE

WITS SCHOOL OF EDUCATION

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL OF EDUCATION ETHICS COMMITTEE

CONSTITUTED UNDER THE UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: 2019ECE010M**
PROJECT TITLE	Perceptions and experiences of primary school teachers in teaching critical thinking in Grade 6 Social Sciences.
INVESTIGATOR	Edwin Mudau
SCHOOL/DEPARTMENT OF INVESTIGATOR	WITS SCHOOL OF EDUCATION
DATE CONSIDERED	18 June 2019

APPENDIX B: PERMISSION TO CONDUCT STUDY BY GDE

GAUTENG PROVINCE
Department: Education
REPUBLIC OF SOUTH AFRICA

8/4/4/1/2

GDE RESEARCH APPROVAL LETTER

Date:	**11 January 2019**
Validity of Research Approval:	**04 February 2019 – 30 September 2019** **2018/398**
Name of Researcher:	**Mudau E**
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	Midrand
Telephone Number:	**082 308 9163 / 071 705 5486**
Email address:	**Edwin.Mudau@gauteng.gov.za**
Research Topic:	**Perceptions and experiences of primary school teachers in teaching critical thinking in Grade 6 Social Sciences.**
Type of qualification	**Masters**
Number and type of schools:	**Two Primary Schools**
District/s/HO	**Johannesburg East**

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted.

11/02/2019

The following conditions apply to GDE research. The researcher may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

Office of the Director: Education Research and Knowledge Management
7th Floor, 17 Simmonds Street, Johannesburg, 2001
Tel: (011) 355 0488
Email: Faith.Tshabalala@gauteng.gov.za
Website: www.education.gpg.gov.za

APPENDIX C: BIOGRAPHICAL INFORMATION OF TEACHERS

Participants' profile

1. What is your academic / professional qualification?

_____

2. What is your age range: 20+, 30+, 40+, 50+?

_____

3. How many years have you been teaching (overall)?

_____

4. What is your subject specialization?

_____

5. How many years have you been teaching Social Sciences?

_____

6. Did you receive CAPS training?

_____

APPENDIX D: INTERVIEW SCHEDULE

INTEVIEW QUESTIONS FOR TEACHERS

Question1: What would you say to a colleague critical thinking is?

Question 2: What are your personal characteristics that enable you to teach critical thinking skills?

Question 3: How could schools encourage teachers to teach for critical thinking?

Question 4: Does your school (teachers and management) ever emphasise critical thinking in teaching and assessment? If so, how is it done or promoted?

Question 5: In what ways does CAPS provide opportunities for teaching critical thinking in Social Sciences?

Question 6: Does the SS policy document provides guidelines on mark allocations in terms of the level of difficulty of questions in formal assessment tasks to be written every term? Yes/ No. Explain

Question 7: Would you say your teaching enhance and promote critical thinking? Yes/ No. Explain

Question 8: Would you say your assessment strategies enhance and promote critical thinking? Yes/ No. Explain.

Question 9: Would you say the textbooks you use provide opportunities for teaching and assessing critical thinking? Yes/ No. Explain.

Question 10: In what ways could grade six learners do critical thinking?

Question 11: How do you see critical thinking, as a generic skill or subject specific skill?

Question 12: Are there opportunities in the History component of Social Sciences for teaching critical thinking?

Question 13: Are there opportunities in the Geography component of Social Sciences for teaching critical thinking?

Question 14: Have you ever experienced using critical thinking activities in the History component? Yes/ No. If yes, explain how you used it. How do you think it worked?

Question 15: Have you ever experienced using critical thinking activities in the Geography component? Yes/ No. If yes, explain how you used it. How do you think it worked?

Question 16: How do you encourage learners to analyse? Give me examples.

Question 17: How do you encourage learners to interpret? Give me examples.

Question 18: How do you encourage learners to evaluate? Give me examples.

Question 19: How do you encourage learners to create in Social Sciences? Give me examples.

Question 20: Do you think there is a relationship between aims; skills and content knowledge in planning your teaching and assessment. Yes/ No. Explain.

Question 21: If you were to make recommendations for the Social Sciences subject, what will they be?

APPENDIX E: A REVISION OF BLOOM's TAXONOMY (Anderson et al., 2001): THE TAXONOMY TABLE

The knowledge Dimension	1.Remember	2.Understand	3.Apply	4.Analyze	5.Evaluate	6. Create
A. Factual Knowledge						
B. Conceptual knowledge						
C.Procedural Knowledge						
D. Metacognitive Knowledge						

APPENDIX F: THE KNOWLEDGE DIMENSION CONSTITUTES FOUR CATEGORIES, NAMELY, FACTUAL; CONCEPTUAL; PROCEDURAL AND METACOGNITIVE.

The knowledge dimension

MAJOR TYPES AND SUBTYPES	EXAMPLES
A. FACTUAL KNOWLEDGE- The basic elements students must know to be acquainted with a discipline or solve problems in it	
AA. Knowledge of terminology	Technical vocabulary, music symbols
AB. Knowledge of specific details and elements	Major natural resources, reliable sources of information
B. CONCEPTUAL FRAMEWORK- The interrelationships among the basic elements within a larger structure that enable them to function together	
BA. Knowledge of classifications and categories	Periods of geological time, forms of business ownership
BB. Knowledge of principles and generalizations	Pythagorean theorem, law of supply and demand
BC. Knowledge of theories, models and structures	Theory of evolution, structure of congress
C. PROCEDURAL KNOWLEDGE- How to do something, methods of inquiry and criteria for using skills, algorithms, techniques and methods	
CA. Knowledge of subject-specific skills and algorithms	Skills used in painting with water colors, whole- number division algorithm
CB. Knowledge of subject-specific techniques and methods	Interviewing techniques, scientific method
CC. Knowledge of criteria for determining when to use appropriate procedures	Criteria used to determine when to apply a procedure involving Newton's second law, criteria used to judge the feasibility of using a particular method to estimate business costs
D. METACOGNITIVE KNOWLEDGE- Knowledge of cognition in general as well as awareness	
DA. Strategic knowledge	Knowledge of outlining as a means of capturing the structure of a unit of subject matter in a text book, knowledge of the use of heuristics
DB. Knowledge about cognitive tasks, including appropriate contextual and conditional knowledge	Knowledge of the types of tests particular teachers administer, knowledge of the cognitive demands of different tasks
DC. Self- knowledge	Knowledge that critiquing essays is a personal strength, whereas writing essays is a personal weakness; awareness of one's own knowledge level

APPENDIX G: Link between research questions and interview questions

Research questions	**Interview questions**	**Themes**
1. How do grade six teachers understand critical thinking in Social Sciences?	1. What would you say to a colleague critical thinking is? 10. In what ways could grade six learners do critical thinking? 11. How do you see critical thinking, as a generic skill or subject specific skill? 14. Have you ever experienced using critical thinking activities in the History component? 15. Have you ever experienced using critical thinking activities in the Geography component?	Theme 1: Perceptions and experiences of Social Sciences teachers**.**
	3. How could schools encourage teachers to teach for critical thinking? 4. Does your school (teachers and management) ever emphasise critical thinking in teaching and assessment? If so, how is it done or promoted? 21: If you were to make recommendations for the Social Sciences subject, what will they be?	Theme 2: The role of school management teams (SMT) in managing quality teaching and assessment in the school.
2. How do teachers' understandings of critical thinking	5. In what ways does CAPS provide opportunities for teaching	Theme 3: Teachers' knowledge of the subject(curriculum)/

influence their pedagogical/instructional and assessment choices?	critical thinking in Social Sciences? 20. Do you think there is a relationship between aims, skills and content knowledge in planning your teaching and assessment? 6. Does the SS policy document provide guidelines on weighting of low order, middle order and higher order questions in formal assessment tasks to be written every term? Yes/ No. Explain 2. What are your personal characteristics that enable you to teach critical thinking? 7. Would you say your teaching enhance and promote critical thinking? Yes/No. Explain. 8. Would you say your assessment strategies enhance and promote critical thinking? Yes/No. Explain. 12. Are there opportunities in the History component/ discipline for teaching critical thinking? 13. Are there opportunities in the Geography component/ discipline for teaching critical thinking?	knowledge of the discipline Theme 4: Pedagogical knowledge/ teaching methods Theme 5: Some of the challenges experienced by Social Sciences teachers in teaching and assessing critical thinking?

	16: How do you encourage learners to analyse? Give me examples. 17: How do you encourage learners to interpret? Give me examples. 18: How do you encourage learners to evaluate? Give me examples. 19. How do you encourage learners to create? Give me examples. 9. Would you say the textbooks you use provide opportunities for teaching and assessing critical thinking?	Theme 6: Learner teacher support material (LTSM)

APPENDIX H: Analysis of the History formal assessment task regarding the cognitive skills using the taxonomy table
T1

The knowledge Dimension	**1.Remember**	**2.Understand**	**3.Apply**	**4.Analyze**	**5.Evaluate**	**6. Create**
A. Factual Knowledge	Question 1.3-1.5(name)= 5 marks Question 2.4(name)= 4 marks Question 3.1-3.2((name)= 6 marks	Question 2.3(explain)= 4 marks		Question 1.1-1.2(analyze)=5 marks Question 2.1-2.2(analyze)=6 marks		Question 3.3(paragraph writing)=10 marks
B. Conceptual knowledge						
C.Procedural Knowledge						
D. Metacognitive Knowledge						

APPENDIX I: Analysis of the Geography formal assessment task regarding the cognitive skills using the taxonomy table
T1

The knowledge Dimension	**1.Remember**	**2.Understand**	**3.Apply**	**4.Analyze**	**5.Evaluate**	**6. Create**
A. Factual Knowledge	Question 1.1-Question1.4-1.5(true/false)=2 marks Question 2.1-2.4(name)=4 marks Question 3.2(name)= 4 marks Question 4.1.1-4.1.7(name)= 13 marks Question 4.2.1(name)= 1 mark Question 4.2.4-4.2.4 (name)=4 marks	1.2(define)=4 marks				
B.Conceptual knowledge						
C.Procedural Knowledge			Question 3.1(locate)=4 marks Question 4.2.2-4.2.3(calculate			

			)=10 marks Question 4.2.5(draw)=2 marks			
D. Metacognitive Knowledge						

APPENDIX J: Analysis of the History formal assessment task regarding cognitive skills using the taxonomy table

T2

The knowledge Dimension	**1.Remember**	**2.Understand**	**3.Apply**	**4.Analyze**	**5.Evaluate**	**6. Create**
A. Factual Knowledge	Question 5-10(name)=13 marks Question 1(match)=7 marks Question 2(fill in)= 6 marks					Question 3(paragraph writing) =4 marks
B. Conceptual knowledge	Question 12(fill in)=3 marks	Question 4(Describe)=2 Question 11(describe)= 4 marks Question 13(explain)= 11 marks				
C.Procedural Knowledge						
D. Metacognitive Knowledge						

APPENDIX K: Analysis of the Geography formal assessment task regarding cognitive skills using the taxonomy table

T2

The knowledge Dimension	**1.Remember**	**2.Understand**	**3.Apply**	**4.Analyze**	**5.Evaluate**	**6. Create**
A. Factual Knowledge	Question 1(Match)=7 marks Question 2(name)=10 marks Question 4,7,8,9(name)=4 marks Question 12(list)= 9 marks	Question 3.3(relate)=5 marks		Question 11(differentiate)= 2 marks		
B. Conceptual knowledge						
C.Procedural Knowledge	Question 3.1-3.2(locate features)=4 marks		Question 5(draw)= 2 marks Question 6(calculate)=2 marks			

			Question 10(calculate)=5 marks			
D. Metacognitive Knowledge						

APPENDIX L: Analysis of the History formal assessment task regarding cognitive skills using the taxonomy table

T3

The knowledge Dimension	**1.Remember**	**2.Understand**	**3.Apply**	**4.Analyze**	**5.Evaluate**	**6. Create**
A. Factual Knowledge	Question 1.1(match)=12 marks Question 2.1(match)= 8 marks Question 2.2(match)=7 marks Question 2.3(name)= 5 marks Question 3.1(fill in)=5 marks	Question 1.2(define)= 5 marks				
B. Conceptual knowledge		Question 3.2(time line)= 8 marks				
C.Procedural Knowledge						
D. Metacognitive Knowledge						

APPENDIX M: Analysis of the Geography formal assessment task regarding cognitive skills using the taxonomy table

T3

The knowledge Dimension	**1.Remember**	**2.Understand**	**3.Apply**	**4.Analyze**	**5.Evaluate**	**6. Create**
A. Factual Knowledge	Question 1.2-1.3.4(name)= 9 marks Question 1.4(match)=5 marks Question 2.1(list)= 6 marks Question 2.2.1-2.2.4(name)= 9 marks	Question 1(define)= 4 marks Question 1.5(explain)= 2 marks Question 1.7(name)=3 marks Question 1.8(organize)= 2 marks				Question 1.6(paragraph writing) = 5 marks
B. Conceptual knowledge						
C.Procedural Knowledge						
D. Metacognitive Knowledge						

APPENDIX N: TEACHERS' INFORMATION SHEET

1342/50,
Rabie Ridge
Extension 2
Midrand
1632
2 April 2019

Dear Participant

I am Edwin Mudau, a Master of Education student at the University of Witwatersrand. I am doing a research project on critical thinking titled: **Perceptions and experiences of primary school teachers in teaching critical thinking in grade six Social Sciences.** The data collection for this research study is scheduled for April and May 2019.

I have selected your school because it has been identified as achieving good results in Social Sciences.

You are kindly invited to participate in this research study. Participation in this research is voluntary, and therefore, choosing not to participate will have no consequence on your part. Should you choose to participate you may withdraw from the study at any given time. You have a right not to answer any question that is put to you.

I would like to interview teachers about their perceptions and experiences of teaching critical thinking in grade six Social Sciences. Furthermore, I would like to analyse the formal assessment tasks administered in term one for both the Geography and History components of Social Sciences.

The interview will be conducted after school hours at a venue that is convenient to you. The interview will be conducted individually to protect your confidentiality. It will be audio taped and will take approximately an hour. You will have an opportunity to check the interview transcript for accuracy. Your name, school and other information that identifies the school will not appear in the research report. Pseudonyms will be used in any writing about the research to protect anonymity. Any information

gathered will be stored in a password protected file, remain confidential and be destroyed 3 years after the completion of the research.

The research is entirely for academic purposes, and for my understanding of teachers' perceptions and experiences in teaching critical thinking.

Please let me know if you require any further information. I look forward to your response as soon as is convenient.

Yours truly

SIGNATURE:

Name: Edwin Mudau
Email: Edwinmudau1@gmail.com
Telephone numbers: 082 308 9163

APPENDIX O: Teacher's Consent Form

Please fill in and return the reply slip below indicating your willingness to be a participant in my voluntary research project called: **Perceptions and experiences of primary school teachers in teaching critical thinking in grade six Social Sciences.**

I, _____ give my consent for the following:

Permission to collect documents	**Circle one**
I agree that formal assessment tasks for grade six social sciences can be used for this study only.	YES/NO

Permission to be audiotaped

I agree to be audiotaped during the interview	YES/NO
I know that the audiotapes will be used for this project only	YES/NO

Permission to be interviewed

I would like to be interviewed for this study.	YES/NO
I know that I can stop the interview at any time and don't have to answer all the questions asked.	YES/NO

Informed Consent

I understand that:

- My name and information will be kept confidential and safe and that my name and the name of my school will not be revealed.
- I do not have to answer every question and can withdraw from the study at any time.
- I can ask not to be audiotaped.
- All the data collected during this study will be destroyed within 3-5 years after completion of the project.

Sign_____ Date_____

APPENDIX P: PARTICIPANT'S CONSENT FORM FOR AUDIO TAPING

I am Edwin Mudau, a Master of Education student at the University of Witwatersrand. I am doing a research on critical thinking titled: **Perceptions and experiences of primary school teachers in teaching critical thinking in grade six Social Sciences.** I kindly request your participation in the study. The study is entirely for academic purposes.

This letter serves to inform you that participation in the research study is voluntary and that you have agreed to the following:

I have received, read and understood the information sheet regarding this research study; and I am aware that all the information I will give will be processed anonymously in this study and the final report.

I understand and agree that the data collected for this study can be processed by the researcher and destroyed once the study is completed.

I may at any given time without prejudice withdraw my consent and participation from this research study and have had sufficient opportunity to ask questions. I declare that I am participating voluntarily in the research study.

For details you can contact me, Edwin Mudau on 0823089163/0717055486 and edwinmudau1@gmail.com. If you agree to participate in this study please sign on the space provided below:

PARTICIPANT' S

Signature: _____ Date: _____

RESEARCHER'S

Signature: _____ Date: _____

APPENDIX Q: LETTER TO THE PRINCIPAL

1342/50,

Rabie Ridge

Extension 2

Midrand

1632

2 April 2019

Dear Sir/Madam

My name is Edwin Mudau. I am a student in the School of Education at the University of the Witwatersrand. I am doing research on **Perceptions and experiences of primary school teachers in teaching critical thinking in Grade 6 Social Sciences.** My research seeks to establish the perceptions and experiences of primary school teachers in teaching critical thinking in grade 6 Social Sciences. This will be achieved through the use of interviews and analysis of formal tasks set by the selected grade 6 teachers involving History and Geography components of Social Sciences.

I am inviting your school to participate in this research. The reason why I have chosen your school is because your school is amongst the best performing schools in Social Sciences grade 6 results. The research participants will not be advantaged or disadvantaged in any way. The interview will be conducted after school hours at a time and venue that does not disrupt the smooth running of your school. To ensure accuracy, the interview will be audio taped with the participants permission and will take approximately an hour. Teachers will be assured that they can withdraw their permission at any time without any penalty. There are no foreseeable risks in participating in this study. The participants will not be paid for this study.

To protect the anonymity of the school and of the participating teachers, the names of the research participants and identity of the school will not be revealed in any writing about the study but will be replaced with pseudonyms. To protect the participants' confidentiality, the interviews will be conducted individually. Data will be

stored in a password protected file and destroyed between 3-5 years after completion of the project.

Please let me know if you require any further information. I look forward to your response as soon as is convenient.

Yours sincerely,

SIGNATURE:

Name: Edwin Mudau

Email: Edwinmudau1@gmail.com

Telephone numbers: 082 308 9163

APPENDIX R: PRINCIPAL'S CONSENT FORM

Please fill in and return the reply slip below indicating your willingness to be a participant in my voluntary research project called: **Perceptions and experiences of primary school teachers in teaching critical thinking in Grade 6 Social Sciences.**

I, _____ give my consent for the following:

Permission to collect documents **Circle one**

I agree that that formal assessment tasks for grade six Social Sciences can be used for this study only. YES/NO

Permission to be audiotaped

I agree that teachers in my school be audiotaped during the interview YES/NO

I know that the audiotapes will be used for this project only YES/NO

I know that teachers need to agree to be interviewed for this study. YES/NO

I know that teachers can stop the interview at any time and don't have to answer all the questions asked. YES/NO

Informed Consent

I understand that:

- My name will be kept confidential and safe and that my name and the name of my school will not be revealed.
- Teachers do not have to answer every question and can withdraw from the study at any time.

- Teachers can ask not to be audiotaped.
- All the data collected during this study will be destroyed within 3-5 years after completion of my project.

Sign_____ Date_____

APPENDIX S: LETTER TO THE SCHOOL GOVERNING BODY

1342/50,

Rabie Ridge

Extension 2

Midrand

1632

2 April 2019

Dear Sir/Madam

My name is Edwin Mudau. I am a student in the School of Education at the University of the Witwatersrand. I am doing research on **Perceptions and experiences of primary school teachers in teaching critical thinking in Grade 6 Social Sciences.** My research seeks to establish the perceptions and experiences of primary school teachers in teaching critical thinking in grade 6 Social Sciences. This will be achieved through the use of interviews and analysis of formal tasks set by the selected grade 6 teachers involving History and Geography components of Social Sciences. The interview session will be conducted at a time and place agreed to by the principal.

I am inviting your school to participate in this research. The reason why I have chosen your school is because your school is amongst the best performing schools in Social Sciences grade six results. The research participants will not be advantaged or disadvantaged in any way. They will be reassured that they can withdraw their permission at any time during this project without any penalty. There are no foreseeable risks in participating in this study. The participants will not be paid for this study.

To protect the anonymity of the school and of the participating teachers, the names of the research participants and identity of the school will not be revealed in any writing about the study but will be replaced with pseudonyms. To protect the participants' confidentiality, the interviews will be conducted individually. Data will be stored in a password protected file and destroyed between 3-5 years after completion of the project.

Please let me know if you require any further information. I look forward to your response as soon as is convenient.

Yours sincerely,

Signature:

Name: Mudau Edwin

Email: Edwinmudau1@gmail.com

APPENDIX T: SGB CONSENT FORM

Please fill in and return the reply slip below indicating your willingness to be a participant in my voluntary research project called: **Perceptions and experiences of primary school teachers in teaching critical thinking in Grade 6 Social Sciences.**

I, _____ give my consent for the following:

Permission to collect documents **Circle one**

I agree that that formal assessment tasks for grade six Social Sciences can be used for this study only. YES/NO

Permission to be audiotaped

I agree that teachers in my school may be audiotaped during the interview YES/NO

I know that the audiotapes will be used for this project only YES/NO

I know that teachers need to agree to be interviewed for this study. YES/NO

I know that teachers can stop the interview at any time and don't have to answer all the questions asked. YES/NO

Informed Consent

I understand that:

- My name will be kept confidential and safe and that my name and the name of my school will not be revealed.

- Teachers do not have to answer every question and can withdraw from the study at any time.
- Teachers can ask not to be audiotaped.
- All the data collected during this study will be destroyed within 3-5 years after completion of this project.

Sign_____ Date_____