PRE-SERVICE TEACHER EDUCATION LECTURERS' CONSTRUCTIONS AND ENACTMENT OF CRITICAL THINKING

BY

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Declaration

I, Carolyn Faye Trim, declare the points listed hereunder to be true.

(i) The research reported in this thesis, except where otherwise indicated, is my original work.

(ii) This thesis has not been submitted for any degree or examination at any other university.

(iii) This thesis does not contain other persons' data, pictures, graphs or other information unless specifically acknowledged as being sourced from other researchers.

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As the candidate's supervisor, I have/have not approved this thesis for submission

Name: Professor Michael Anthony Samuel

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Abstract

Critical thinking (CT) is mandated in South African education policy as essential for educational transformation, yet its implementation relies heavily on individual practitioners. While extensive literature explores CT's theoretical value, limited empirical research examines how lecturers actually understand and practice CT in their everyday teaching contexts. This study investigated how Pre-Service Teacher Education (P-STE) lecturers construct and enact critical thinking, and the factors influencing their practices.

The research employed an interpretive single-site case study design at one independent higher education institution in eThekwini, South Africa. Six P-STE lecturers participated through lecture observations and semi-structured interviews. The study used currere as a theoretical lens to examine curriculum and policy documents mandating CT, while the Forcefield Model of Teacher Development helped identify influences on lecturers' CT constructions. Thematic analysis was applied to generate findings addressing the research questions.

Key findings revealed that education policy mandated CT implementation without providing conceptual clarity about what CT entails or how it should be taught and learned. This gap left lecturers with limited practical guidance for implementation. Lecturers' understanding of CT was primarily shaped by their disciplinary backgrounds, which drew heavily from Western university traditions encountered during their own undergraduate education. Their CT enactments reflected these experiential encounters, with additional minor influences from home environments and high school experiences.

The study concluded that in South Africa's complex educational context, lecturers draw from diverse sources, including disciplinary knowledge, higher education experiences, schooling, and personal backgrounds, to create their own approaches to CT. These self-constructed assemblages reflect lecturers' ingenuity in addressing the absence of clear implementation guidance. The research recommends that CT development would benefit from more deliberate national and institutional support that clarifies not only CT's theoretical importance but also provides practical implementation strategies, thereby better supporting P-STE lecturers in fostering critical thinking skills.

Dedication

I dedicate this work to the Almighty, Creator of the forefathers who lent their genes, learning, adventurous spirits and accomplishments to my parents, immediate family and me. Those in spirit and person who have been at my side, tutored, led by example and inspired me are my most near and dear – partner, mother, father (late) and brother. You, and memories of you have been the rocks to lean on. Thank you for your motivating expectations and encouragement, belief in me and the endless patience and sacrifice that accompanied the seemingly endless years of study. To the extended family and friends who constantly asked after my progress through this journey, please know that it was really uplifting to have your interest and encouragement.

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The immediate agreement and consent from the participants to join in this research endeavour made this study possible; you know who you are and I am deeply impressed by your courage and insight. I am indebted to you for the time you invested in learning with me.

The support, patience and encouragement of my partner are beyond measure and the time and energy shared on this journey are far more than anyone should have had to endure. You have made the time count in so many ways following your own fantastic and worthy pursuits. What a gem! To my dearest, dearest Mom who had hoped I would have a doctoral degree conferred on me before she reached her 80th birthday, alas, it took longer than we could have anticipated. Your patience has been tested but your support has been as limitless as always. To my family and friends who have shown great belief and interest in my work and no less, the completion of it, I apologise for sacrificing time with you for this selfish pursuit. The journey has been lonely but fulfilling and if you will have me back in your company, I am back.

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To the readers and critics of this thesis – I would have been lost for words without your devoted attention to detail. Many thanks for the hours and expertise.

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List of abbreviations

4IR	4th Industrial Revolution
BT	Bloom's Taxonomy (Bloom & Krathwohl, 1956)
C2005	Curriculum 2005
CAPS	Curriculum and Assessment Policy Statements
CCFO	Critical Cross-Field Outcome
CHE	Council on Higher Education
CT	Critical Thinking
DBE	Department of Basic Education
DHET	Department for Higher Education and Training
DOE	Department of Education
DVD	Digital Video Disc
FMTD	Force Field Model of Teacher Development
HE	Higher Education
HEI/s	Higher Education Institution/s
HEQC	Higher Education Quality Committee
HEQSF	Higher Education Qualifications Sub-Framework
IKS	Indigenous Knowledge Systems
LoLT	Language of Learning and Teaching
LTM	Long-term Memory
MRTEQ	Minimum Requirements for Teacher Education Qualifications
NETF	National Education and Training Forum
NQF	National Qualifications Framework
OBE	Outcomes-Based Education
PGDHE	Postgraduate Diploma in Higher Education
P-ST/s	Pre-Service Teacher/s
P-STE	Pre-Service Teacher Education
RT	The Revised Taxonomy (Anderson & Krathwohl, 2001)
SA	South Africa/South African
SAQA	South African Qualifications Authority
SL/s	Study Letter/s
STM	Short-term Memory
T&L	Teaching and Learning

UKZN	University of KwaZulu-Natal
USA	United States of America
UK	United Kingdom
WIL	Work Integrated Learning
WUT	Western University Tradition

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Structural overview of the thesis

This thesis consists of three parts:

- **Part One: Setting up the study**

This section is comprised of four chapters: Chapter One, Chapter Two, Chapter Three and Chapter Four. These chapters introduce the phenomenon of critical thinking and establish the focus of the study. A theoretical framework is established, the problem statement and research questions are confirmed, and a methodological plan is devised.

- **Part Two: Learning from the field**

This section is comprised of two chapters: Chapter Five and Chapter Six. These chapters contain descriptive and evaluative content focussed on data from the field.

- **Part Three: Abstracting from the field: Building a thesis.**

This section is comprised of two chapters: Chapter Seven and Chapter Eight, which provide deeper levels of abstraction to examine contextual, methodological and theoretical contributions arising from this study.

An overview of each of the parts is provided at the beginning of each of the three sections to guide a detailed orientation to the foci of each of the chapters therein.

PART ONE: SETTING UP THE STUDY

Part One of this thesis is comprised of four chapters that furnish the contextual, theoretical and methodological sub-structures that guided this study. Part One constitutes the setting up of the study.

Chapter One presents the altering historical, political, and contextual milieux of pre-service teacher education in South Africa. It briefly introduces the curriculum and policy related to critical thinking and states the rationale of the study. The problem statement is expressed, and an objective setting and the critical questions are devised. The context, participant lecturer group and researcher position find form. Theoretical lens and methodology construction are named and discussed.

Chapter Two explores an unfolding contextual landscape of the environment in which critical thinking (CT) is theorised and enacted. The first section is a brief chronological exposé of the rise of critique in the knowledge university; this establishes the initial positioning between knower, knowledge and CT. A literature review traces how the relationship alters with time, as does CT over time. The discussion suggests that the need may arise to consider more than one perspective about the traditional basis of CT and approaches to critical thinking in the context of P-STE in South Africa. The definition of critical thinking clarifies how critical thinking is tentatively viewed at the start of this study and an attempt is made to establish the meaning of the term enactments. A conceptual understanding of critical thinking (nomenclature, constructions and interpretations) is sought and discussed across a range of literature that demonstrates the breadth of the phenomenon. The review of literature having demonstrated that CT is a vast phenomenon, the decision is taken to focus on a selection of literature from perspectives founded on the principles of the Western university tradition, specifically from perspectives of educational psychology, and philosophy. Critical thinking as a phenomenon from theoretical, and teaching and learning perspectives is examined.

Following on from the above, it is established by means of early document analysis of the national curriculum and policy documents which mandate critical thinking as a critical cross-field outcome of education, what CT is from a policy perspective. Finally, the CT literature is examined to determine where CT could be applicable.

This chapter constitutes a theoretical lens as the first of three lenses in a multifaceted lens to examine the past and present relations between the knower (lecturer/individual), the knowledge, CT policy, and the received versions of CT (as a phenomenon). This positioning

is essential in understanding the P-STE environment (theoretically and contextually) in which the lecturer and CT are under study.

Chapter Three – Theoretical Framework

In Chapter Three, knowledge and critical thinking are discussed synonymously and viewed as complementary phenomena. This is established in a literature review in Chapter Two which is the first lens of a theoretical framework. Given the curriculum knowledge in the pre-service teacher education (P-STE) towards which CT is directed, the force of currere (Pinar, 2011) is suggested as a means to interrogate the curriculum (structure and intention at a policy level). The conceptual force of active currere informed by Wallin (2010) helps to envision how CT might be enacted in pedagogy. The forces and factors of the Forcefield Model of Teacher Development (Samuel, 2008) assist in identifying what forces might be contingent on the individual in their pursuit of CT. The chapter adds two theoretical framings (as named above) to examine the policy environment for knowledge in which CT is to be implemented and to connect to influences that may be contingent on the individual within the wider HE context and beyond in the endeavour of critical thinking. A multifaceted lens is formed which shapes the overall conceptual intellectual trajectory of this study. The components of the multifaceted lens focus, magnify and direct aspects of the study - methodological design, and the analytical approaches.

Chapter Four - Methodology

Chapter Four is the methodology chapter which draws on insights from the theoretical and praxis discussions in the first two chapters. The manyfold considerations for the design of this study are approached with a framework of theory and experience of a range of researchers who influenced me to design and conduct fieldwork within an interpretive paradigm. The interpretative paradigm honours research with six participants in a complex South African setting. The approach to data analysis is considered with attention to detail that calls for interpretation that, given the complexity of the setting and context, there must necessarily be vigilance of the researcher's position. The milieu in which CT occurs is viewed as delicate and complex; therefore, the exploration of lecturer views on CT must take account of those complexities.

Chapter Five – Data Analysis – Level 2

Chapter Five is the first of two chapters in which data from the field is reported and interpreted.

The chapter reports the CT declared by lecturers in institutional documents based on document analysis of each. This is to establish how the plan for CT will be implemented. The lecturer views on knowledge are also drawn from the interview transcripts. This involves identifying the kinds of knowledge that lecturers bring to the fore in their lectures and where they believe knowledge resides (in resources, in themselves, in experts). The lecturer declarations of CT are sought from semi-structured interview transcripts in which they have discussed also what they believe CT to be. This is achieved through the recording of instances of CT which lecturers have indicated are enactments of CT. The findings from the field are reported and a reflection across participants consolidates key issues.

Chapter Six – Data Analysis – Level 2

Chapter Six is the second of two chapters in which data from the field are reported and interpreted.

Interview data extracts are drawn into data chunks (Braun and Clarke, 2006, p. 79) and then into key themes that were determined by the amalgamation of the participants' comments and actions. Discussions around the findings led to groups of meanings being interpreted around each participant's messages. The introduction establishes that the data were analysed and interpreted as accumulative, per participant, across two chapters. The data originated from field observation and interview transcripts and the focus was on critical thinking. The focus of the analysis and interpretation is how lecturers enact CT and why they construct and enact CT the way that they do. The reflective interpretations of each participant are compared and contrasted and worked into themes while preserving the integrity of the data. The analysis reports themes as follows a) the case of discipline as the guide of CT b) the experience of home schooling and higher education c) socio-cultural and academic targets in a P-STE environment were drivers of CT.

A synthesis of Chapter Five and Chapter Six notes the findings across participant data. The findings are drawn into themes for further treatment in Chapter Seven.

Chapter Seven – Data Analysis – Level 3

Chapter Seven introduces the themes created from interpretations of data from the field. The themes are drawn beneath the original multifaceted lens of factors within forces proposed in the Forcefield Model of Teacher Development (FMTD) (Samuel, 2008), and the conceptual

forces of currere and active currere (Pinar, 2011; Wallin, 2010). Currere and active forces previously lent perspectives to the views of knowledge within the P-STE curriculum, and opened an opportunity to consider the conceptual reactive currere impact on CT. It also helped to shape thoughts about what CT might be comprised of and how it might be thought of in pedagogy. The four forces of the FMTD brought specific and various views into focus to contemplate what might influence individual lecturers' constructions and enactments of CT. The coalesced lens surfaced contentions in the context in which knowledge is handled in the P-STE, and of how CT is currently conceived of. The lenses shaped the questions of how policy intends CT, how policy is interpreted, and how CT is implemented/approached and enacted at national, institutional and individual levels respectively. The themes that were drawn from interpretations of data in the field, required a means to view permutations of findings into cohesive and possible explanations that would address the critical questions. The concepts of territorial assemblage (territorialisation and deterritorialisation, relational lines, lines of flight, truncation and bifurcation) were integrated into a more complex coalesced lens that was capable of organising ideas and themes that arose from data analysis and data theme interpretations (shaped by research questions and specific research approaches and tools). The assemblage rendered not only permutations of how CT might be constructed and enacted and reasons for such. It also prepared the foundations for developing a theoretical view of how lecturers in P-STE constructed and enacted CT and the rationality that led to such.

Chapter Eight – Concluding Thoughts

This chapter includes a consideration of how each chapter contributes to the study. It also proceeds with presenting theory-driven conclusions in response to the critical questions developed for this study, which led me to analyse how pre-service teacher education lecturers constructed critical thinking within the pre-service teacher education curriculum, how they enacted critical thinking and the rationale they offered for constructing and enacting CT in the ways that they did. The chapter offers thoughts on CT at a meta-level that contemplates the meaning found in this study about what CT is to lecturers in P-STE. This discourse brings the study to a close.

CHAPTER ONE: BACKGROUND TO THE STUDY

1.0 Introduction

Critical thinking is a targeted goal, mandated in the South African post-apartheid curriculum policy for pre-service teacher education and education as a whole (SAQA, 2000). Carmichael and Stacey (2006, p. 1) suggest that its neglect could hinder the transformation of the entire education system in South Africa. This view is supported by Pityana (2009, p. 5) who writes about the access, equity and quality of higher education requiring "precise critical thinking" to "open up a whole new world" of knowledge that has been suppressed and denied so many people in Africa, which was the focus of this study. Literature advocating the generic traits and value of critical thinking as pivotal aspirations for curriculum design for basic and higher education is plentiful (Astleitner, 2002; Bacon & Thayer-Bacon, 1993, 2000; Bailin, 2002; Barnes, 2005; Barnett, 2004; Bellaera, Weinstein-Jones, Ilie & Baker 2021; Danvers, 2016; Dewey, 1910; Ennis, 1990; Enslin & Horsthemke, 2015; Facione, 2015; Golden, 2023; Halonen, 1995; Kegan, 1994; Mclellan & Soden, 2012; McPeck, 1981; Mpofu & Maphalala, 2017; Nickerson et al., 1985; Olatunji, 2017; Papastephanou & Angeli, 2007; Paul, 2005; Phan, 2010; Pollard, 2014; Sears & Parsons, 1991; Shriner, 2006; van Gelder, 2005) (see Chapter Two). However, in the context of South African pre-service teacher education, the availability of literature drawing on empirical work that explicates what critical thinking is and how it manifests practically, and the reasons for such, is less prolific. Much of the research concerning critical thinking remains in the realm of expectations and practice targets among school teachers (Considine, Haley & Lacy, 1994; Cottrell, 2011; Edwards, Cook & Todd, 2010; Grigg & Lewis, 2018; Noddings, 2006; Phillips, 2023; Sedgwick, 2008; Uddin, 2019; Kincheloe & Weil, 2004). The abovementioned claims about the skewed focus of research literature on critical thinking are explored in more depth in the opening chapters of this study (Part One). I advocate for attention firstly to be given to what critical thinking is intended (nationally), what it is to be directed at and what it might be anticipated it will achieve, and how it has been constructed in literature and practice over time. An in-depth analysis of how (if at all) critical thinking is finding its way into the space of the South African pre-service teacher education curriculum is the focus of this study. I hold that it is necessary to ask the lecturers of pre-service teachers in a single independent institution to share their understanding and interpretations of critical thinking. The study employed data-driven analysis viewed through the lens of conceptual forces of currere (Wallin, 2010), and the Forcefield Model of Teacher Development

(Samuel, 2008), to explore existing constructions and enactment of CT and to organise the data-driven analysis of research findings. The complex theory of assemblage magnifies aspects in the theory-driven analysis of how the critical thinking of lecturers of pre-service teacher education students is constructed and enacted to open up new interpretations of a much-explored phenomenon in an under-represented context.

1.1 Overview of the chapter

In this chapter, I introduce critical thinking (CT) as a mandated outcome of the broader education system in South Africa. I introduce the intended outcomes and indicate that CT literature related to how lecturers in higher education in South Africa construct and enact critical thinking is not plentiful. The topic of CT in this study was viewed in relation to why one has to think critically and what one has to think critically about and how the lecturer perceives CT in theory and practice.

In the first section, CT is situated within the pre-1994 dispensation and within the changing historical and contextual pre-service teacher education landscape. The intention is to identify ways in which the shifting landscape might have shaped critical thinking (1.2). When and how critical thinking was deliberately established as a mandated critical cross-field outcome of education is explained and the responsibility aspects of its implementation are introduced. The possibility of the tentativeness of policy implementation is introduced against a background of what CT is intended to achieve (1.3). I provide the rationale, problem statement and objectives and establish research questions suited to pursuing an understanding of the phenomenon of critical thinking to signal the proceedings to follow in this study (1.4). In the ensuing section, the context of the study is identified in terms of locale, site and the profile of the institution from the students' and lecturers' perspectives (1.5). The methodological paradigm, approach and methods that lie within the qualitative realm of research are introduced (1.6). My positionality as the researcher who explores constructions of critical thinking among lecturers is explained briefly to contribute to the rationale for my interest in critical thinking. I, as the researcher, acknowledge that I constrain and enable, see, hear, feel and interpret the circumstances related to CT from my perspective but insight from lecturers is greatly needed (1.7). The theoretical framing that guided this study is introduced (1.8). The ensuing section explicates the interest and significance of this study that was driven by the investment of lecturer time and expertise; whose proximity and willingness to engage in the described approaches motivated me. In establishing the significance of the study, I also considered

delimitations and trustworthiness of the ethics when interacting with the lecturers (1.9), however, the full explanation is covered in Chapter Three. An overview of the thesis, which comprised three parts is offered. Within each part, the reader is orientated to the contribution of each chapter in constructing the architecture of the study. This study is anticipated to facilitate a theoretical understanding of the lecturers' relationship with the knowledge they teach. This relationship is held as central to how critical thinking is constructed and enacted. The reasons for the relationship will be drawn into theoretical understandings of relationships in the SA P-STE context of this study (1.10). An overview of the thesis structure is offered in this section and finally, a chapter synthesis draws together, not conclusions but openings for the exploration of both knowledge and critical thinking in the subsequent chapter (1.11).

1.2 Critical thinking in pre-service teacher education in South Africa

In this section, I situate critical thinking in the contextual historical perspective of South African pre-service teacher education (P-STE). This is an environment that has undergone a recent metamorphosis (pre-apartheid to post-apartheid). I explore the possibilities of how such change might have shaped the critical thinking of pre-service teacher education lecturers.

1.2.1 Historical setting of pre-service teacher education

A prominent topic in education is the urgent need for an overhaul of the South African education sector after the demise of apartheid in 1994 (Chisholm, 2004; Kraak & Young, 2001). The intention of this historical watershed (Christie, 2020) was to widen access, redress past inequalities, build foundations and foster political, social and economic development (Sayed, 2004; Singh, 2011). The overarching purpose of this politico-philosophical coup d'etat was to democratise all spheres of human existence within the country's political borders and demolish the hegemony of apartheid (Teferra, 2017). Among the first areas addressed was education. New goals for education were negotiated and implemented (Vithal et al., 2005). The overhaul of pre-service teacher education (P-STE) represented a significant portion of the democratisation of the education sector. The overhaul had the potential to shape the P-STE environment to enable CT and be enabled by critical thinking.

1.2.2 Restructuring pre-service teacher education

At the time of the Union of South Africa (1910) and until the early 1990s, pre-service teachers (P-STs) who were preparing to teach in the foundation and intermediate (primary school) phases of schooling were educated in racially segregated teacher training colleges. Those who were to teach the senior and further education and training phases (high school) completed an

undergraduate degree and a Higher Diploma in Education (HDE), both offered at public universities. Black, coloured and Indian pre-service teachers (racial classification according to the Population Registration Act of 1950 (South Africa)) were educated at distance education universities or training colleges (CHE, 2010, p.71), some of which were situated in the "homelands" or Bantustans[1] (Worden, 2000). In some areas in South Africa, black teachers were appointed to teaching positions with no formal teaching qualifications; a situation that harked back to circumstances established in the late 1800s (Welch, 2002, as cited in CHE, 2010).

In 1990, the National Education and Training Forum's (NETF) landmark decision concerning higher education resulted in the incorporation of pre-service teacher education colleges into the main university structures (CHE, 2010; Samuel, 2012, 2016; Vithal et al., 2005). In 1998, a Departmental Technical Committee prepared a document outlining how a redesign of the systems of higher education would manage the preparation of all teachers as a part of a graduate profession. In 2001, the colleges were incorporated into the university higher education system and by 2003 the task was structurally and materially completed (Jansen, 2003), as cited in CHE, 2010). The incorporation of teacher education colleges into the higher education system was, at the time, a trend contrary to practices in other parts of the world (Jansen, 2002a). The agenda, formalised in the Education White Paper Three (Department of Education, 1996) and the Higher Education Act 101 of 1997 (South Africa, 1997), was multifaceted. First, it was to introduce extensively revised requirements for teacher qualifications and new requirements for teachers-in-training (used synonymously with the term pre-service teachers) (Samuel, 2012), particularly in relation to the various approaches used in colleges and universities (vis-á-vis technical training versus theoretical education). Second, the 'new training' was new because it now required that pre-service teachers be prepared in a way that contributed to activating their professional contribution to constructing a non-racial democratic society, whereas previously they were regarded as technicians. Third, the agenda intended to raise the profile of teacher education across all race groups onto a common platform to counteract the apartheid mentality that different levels of education were orchestrated for people of different racial backgrounds (CHE, 2010). The move radically altered "the work of teachers and pre-service teacher

[1] The Bantustans or homelands, established by the Apartheid Government, were areas to which the majority of the black population was moved to prevent them from living in the urban areas of South Africa (Worden, 2000).

education providers", especially in the areas of monitoring and evaluation (Sayed, 2004, p. 262). Fourth, preparation was to be made for the predicted massification of higher education (Jansen, 2002a).

The lecturers in P-STE colleges were either retrenched, sought positions in independent private higher education institutions (HEI) or were absorbed into public universities (CHE, 2010; Samuel, 2012; Samuel, 2016). The massification of higher education (HE) in SA accommodated the shift of personnel. However, the main purposes of the amalgamation of P-STE education into the main universities were 1) to remove the fragmentation of the 17 separate Departments of Education of the apartheid era and streamline resources and 2) to raise the benchmark by insisting that all prospective teachers hold a degree, thus replacing the multiple diploma and certificate qualification structures awarded to teachers of the apartheid era.

The explanation above contextualises the lecturers within the changing landscape of education. Previously, the very nature of engagement of lecturers in training colleges had focused on teaching technical skills, which characterised prospective teachers as technicians of implementing apartheid and racially-divided school curricula. By contrast, university teacher education, which was largely restricted to more privileged race groups, emphasised the development of an applied science model of teacher development and foregrounded the role of a theory-led pragmatic approach to developing teachers (CHE, 2010).

The former college primary school lecturers, who tended to emphasise their roles as enactors of pragmatic skills for teacher development, were not in sync with the curriculum emphases practised by university faculties of education. This dichotomy of emphases in teacher education curriculum approaches, was accentuated because university lecturers were accustomed to only preparing teachers for secondary schooling. Later, research involvement dominated the university agenda and influenced the identity construction of the faculty university lecturers where the theoretical endeavours intensified as did the requirement for critical engagement. In the early years of mergers and incorporations, the preparation approaches and methods used by lecturers in each type of teacher education institution came to be in conflict, as institutional personnel from colleges and universities negotiated their collaboration. Several lecturers from former colleges of education criticised university education as "too theoretical" and inadequate for the needs of training/educating teachers for the classroom (Samuel, 2012, p. 27). Others criticised the college training as insufficiently academic. The implicit suggestion in the historical outline was that the theoretical approach followed by universities may have favoured

critical thinking (largely attributed to academic education) more prominently than did the colleges. It is possible that neither institutional context was particularly conducive to CT nor that they actively promoted it. It is not to be assumed that higher education reforms and accompanying policies and practices which ensued in the South African post-1994 era altered the position of critical thinking, despite a mandate for HE CT being established in SA HE in policies of the mid-2000s. It is relevant to mention that well into and beyond the 1990s, Barnett (1997) and McBride, Xiang, Wittenburg, & Shen (2002) in the UK, and Halpern (1997) in the USA, reported that in their countries, which formed part of the English-speaking world, and more specifically the Global North, students were not engaging or being engaged sufficiently in CT in their higher education institutions (HEIs); a vexing issue that they sought to research in their national contexts. Subsequently, in South Africa, small amounts of research on CT as a critical cross-field outcome (CCFO) of HE have been published. These include Vithal et al. (2005) who have reported a similar situation in the SA HE context and how CT is absent in school curricula, especially in Mathematics. The restricting effects were imposed on learners and students in apartheid education. The teachers and lecturers of P-STE are those who were recipients of the throttled thinking within education; in contrast to the ideological and sometimes physical battles that raged in anti-apartheid movements. The anti-apartheid movements were often aligned with 'radical' forms of critical thinking. Can this be the reason that CT continues to be reported as lacking? Carmichael and Stacey (2006) explored the extent to which critical cross-field outcomes were developed as important meta-competencies for leadership and management among South African MBA graduates at a premium research-intensive university. The research concluded that in the MBA context (at National Qualifications Framework Level 9), the students' indicated that the CCFOs were useful but they needed to be embedded more deliberately into the programmes to develop graduate skills. Cloete (2015), in a (Masters Dissertation) quantitative study of CT looked at how CT is incorporated into Management Accounting programmes. She intoned that CT can be enhanced with the use of integrated assessment, (that incorporates real-life situations) in pre- and- post-assessment. The measurement of the success of CT over time was sought by means of integrated assessment as an intervention and measure the development of the CT in readiness for the workplace. Mpofu and Maphalala (2017) conducted literature research on strategies that encourage CT in P-STE. They concluded that quantitative measurement of CT skills, such as that found in programmes designed to 'test' and 'measure' CT, must be preceded by the identification of CT-fostering techniques and strategies to be used by the lecturer to demonstrate and design CT for P-STEs. They concluded that techniques include implicit and

explicit teaching and learning techniques such as questioning, modelling, and group activities, to name some. References to publications above show that the status of the CCFO CT carries high stakes in the education arena but not only specifically in P-STE, but in other HE teaching areas also. Furthermore, the references highlight that research focussing solely on CT P-STE is minimal.

The central interest that is not broached is how an evolving historical, political and policy climate (nationally and institutionally) influences the conceptions that lecturers developed about the meaning and exercise of critical thinking.

To advance the notion of the influence of preparation and environment in which CT has been largely absent and possibly evolving, I offer that in the pre-1994 era, the school-like conditions of pre-service teacher education colleges under the auspices of the provincial education authority (Jansen, 2004) stood in stark contrast to the autonomy of the universities. Even under an oppressive past régime, the latter fiercely protected the concept of 'institutional autonomy' as embedded in TB Davie's classic formulation of academic freedom as, "our freedom from external interference in whom shall teach, what we teach, how we teach and whom we teach" (Du Toit, 2001, p. 2). This freedom was achieved in some but not all areas of higher education and social life, given the government's hold and monitoring of education at that time. Latitude for opinion, opposition, and a society free of censorship were not to be openly encountered in the halls of academia – colleges and universities alike, amidst the strongly-regulated apartheid higher education systems (Msibi, 2016, p. 223). How then did this academic freedom influence the lecturers' conceptions of critical thinking? How did the institutional and historical culture affect the practices and responsibilities as they came to be interpreted?

My study locates the construction of CT within this turbulent, evolving context in which the lecturers in this study either attended school, were taught by teachers and lecturers who were themselves likely subject to the past influences or attended university for their own continued education over the period of educational reform.

1.2.3 Pre-service teachers' professional qualification requirements

Close on the heels of the restructuring of P-STE was the restructuring of the National Qualifications Framework to bring common meaning, understanding and value to all education and training levels and routes and the establishment and involvement of regulatory bodies (HEQSF, 2013; Samuel, 2012). A series of laws and policies related to education, qualifications

and pre-service teacher education was promulgated, debated, circulated for public comment, tabled and passed through the state and provincial legislative structures (Ramrathan, Le Grange & Higgs, 2017).

The restructuring of education in schools required thoroughly-trained teachers, in contrast to pre-1994 South Africa when black, Indian and coloured learners were often taught by underqualified staff (Macha & Kadakia, 2017). To alleviate the shortage of qualified teachers, for a brief period, the pre-service teacher education qualification requirement in several universities was relaxed from four to three years (Council on Higher Education, 2010; Department of Education, 2006). Four-year teaching preparation was criticised for being too long, too expensive and not aligned closely enough with the schooling curriculum. However, the Bachelor of Education degree for specific phase teaching was reinstated as a four-year qualification to elevate the status of all teacher education qualifications for all race groups in all phases of schooling (Council on Higher Education, 2010). The qualification level of the bachelor's degree for education and the PGCE was set at, and remains at, the National Qualifications Framework (NQF) Exit Level 7 (DHET, 2015). The NQF Level reference is significant in the discussions about CT in this report, therefore, it is dealt with in detail. (Chapter Two and 4.4.3).

Greater autonomy in the curriculum design for pre-service teacher education accompanied the teacher training colleges' move from provincial Department of Education control to public universities and the accompanying rationale for equity, reform and the upgrade of the teaching profession. Teaching methods that would encourage learner-centred teaching, CT and problem-solving skills became a requirement. Within the historical era of apartheid, which largely lacked democratic processes (Jansen, 2013), most schools and teacher training encouraged "a rote and transmission-oriented learning approach" (Sayed, 2004, p. 258) "… with little evidence of demands for critical thinking" (Vithal et al., 2005, p. 185). In a more recent publication, America and Le Grange (2019) reported that the pedagogy of rote learning is still evident in South African HE today despite it no longer being relevant or suitable. The presence of CT in this situation, although largely absent, is nonetheless mandated.

It is worth noting that the educational qualification for lecturers of pre-service teachers has to be higher than that of the students whom they teach. (This has always been the case in white higher education institutions but less so in the past among segregated institutions designated for other race groups). The Department of Higher Education and Training (DHET) (2015)

continues to require an NQF Level 8 qualification from pre-service teacher education lecturers. The note above is to signal that NQF Level descriptors 7 -10 distinctly identify CT as a critical cross-field outcome of education and therefore, one might assume that lecturers would have encountered CT in their own postgraduate studies. Recently, public universities have made a doctoral qualification or significant progress towards the completion of a doctoral qualification (NQF Level 10), the minimum requirement for lecturing in a higher education institution. In the independent institution in which this study was conducted, the minimum requirement for a lecturing post was an Honours degree but since 2014, this has become a Master's qualification, especially to prepare for Postgraduate Certificate/Diploma and Honours programme teaching.

While the education of teachers was being revised, so too was the school curriculum. The introduction of Curriculum 2005 (C2005), which strove to bring the SA school curriculum in line with international practice, was deemed to "represent our best hope of transforming the retrograde inheritance of apartheid-era learning theories and obsolete teaching practices" declared the outgoing Minister of Education, Asmal (1999, p. 12). The curriculum for schooling and P-STE and the knowledge within P-STE is brought into focus in Chapter Two of this report.

1.3 Pre-service teacher education, policy, curriculum and critical thinking

A host of policy and regulatory publications for pre-service teacher education emerged as a result of the Higher Education Act No. 101 of 1997. I thought that I should make a study of particular vital aspects of the higher education requirements, namely critical thinking and doing, amongst pre-service teacher education lecturers specifically. To be 'critical' and function 'critically' are prescribed for all higher education students, as documented in the South African Qualifications Authority (SAQA) Level Descriptors for the South African National Qualifications Framework (SAQA, 2012). It seems that the term is widely used, undefined, left to interpretation and incumbent upon the lecturer and student in pre-service education to know what it is, how to enact it and how to activate the goals it can purportedly achieve. The expectations of 'critical' and 'critically' implicitly suggest a panacea for the past education inequalities and more explicitly, a starting block from which to launch accelerated broad social development, readiness for a digital future and, more recently, for the Fourth Industrial Revolution (4IR) (Menon & Castrillón, 2019). Within the past eighteen months the rapid development of deep-learning Large Language Model (LLM) Artificial Intelligence text and content generators have entered the academic world en masse (Baytak, 2023; Crawford,

Cowling, Ashton-Hay, Kelder, Middleton & Wilson, 2023). It is not within the scope of this study to gather details in this burgeoning and uncertain field but it highlights yet another demand to which pre-service teacher education lecturers will be obliged to respond in terms of critical thinking.

In the South African education policy and curriculum documents, there are limited descriptions of what critical cross-field outcomes entail other than in discussion documents that cannot be accessed in the public domain (Carmichael & Stacey, 2006). An analysis of the literature reveals a similar dearth of discussion about what 'critical' thinking is in the South African higher education context (Mpofu & Maphalala, 2017). There is an error in thinking that teaching and learning training will automatically imbue lecturers with the CT skills mentioned in policy and regulations, although this could be expected given the time and energy expended on rethinking that policy and those regulations. That which occurs in reality, Sayed (2004) suggests, is a mere echo of the intended curriculum plan and that which is enacted.

A key challenge of the South African HE system, also in Canada (McPeck, 1981) and the USA (Halonen, 1995) and Barnett (1997) in the UK, is that it is "lacking a critical thinking and problem-solving element" (Adams, 2011; Nkealah & Simango 2023). Jansen (2013) strongly supports the latter view. Vithal et al. (2005, p. 8) state that in the mid-1990s, "Outcomes Based Education (OBE) was adopted [in schools] … to modernise and strengthen the teaching and learning approaches in the new education system because previously the disparate apartheid system of education did not encourage much variety in theoretically informed pedagogy, unfortunately, "The pedagogy was strong but the epistemology was weak". OBE (in its first iteration of curriculum design) was phased out in 2004 because of a lack of adequate thought by policymakers for a well-designed and soundly implemented pedagogical development programme for pre-service teachers, in-service teachers and lecturers of pre-service teachers. The OBE plan was largely unsuccessful and can hardly be said to be sustainable; it was simply well-intentioned and disastrous for uninformed teachers and the learners in schools at the time. A meaningful, relevant change in policy and curricula is vital and could be revitalising but, as with the OBE school curriculum, could it be that critical thinking curricula and policy for higher education and modules in which pre-service education lecturers engage may have equally weak foundations for implementation of critical thinking? The question is based on the fact that national documentation provides the motivation for CT and sets out its intention but appears to ignore the pedagogy of how CT might be defined and implemented. The accompanying

disciplinary and pedagogical knowledge at the lecturer level, in the new higher education university context, on how to do this has not been forthcoming (Sayed, 2004, p. 258). This has probably prompted the claims about nationally mandated and institutionally anticipated CT not reaching the desired target groups of pre-service teachers or learners in schools.

As indicated previously, it would appear that CT is deemed an elixir in higher education (Fahim & Mansour, 2012) and one that is intended to make a new society through a trickle-down effect to lecturers, pre-service teachers and ultimately learners in schools (America & Le Grange, 2019; SAQA, 2000). Given the mandate that is passed to lecturers by the education curriculum policymakers to bring about critical thinking (SAQA, 2000), in this study I have elected to explore lecturers' constructions of critical thinking. I hold that the critical cross-field outcome referred to as critical thinking (see 2.5.3), while being a product of care and concern on the part of policymakers who were eager to breathe life into a newly created education system, was merely inserted into the curriculum. Critical thinking has been assimilated into higher education in the same way as one might assimilate a welcome guest — where there is space to do so in a makeshift way; 'policy assimilation' at an organisational level, where, in the South African context, a policy is "a set of ideas or a plan of what to do in particular situations that have been agreed to officially by a group of people, a business organisation, a government, or a political party" (Cambridge University, n.d.) and 'assimilation' means "to fully understand an idea or some information so that you are able to use it yourself" (Oxford University, n.d.).

To return to the idea of a welcome guest, the full implications of the guest's stay are uncertain and unfold as the stay progresses and that is what I believe to be the case with critical thinking. I question how deep-seated and embedded are CT conceptions within the day-to-day practices of lecturers in present-day teacher education institutions some twenty-five years after the official demise of the apartheid political and education systems and the laying down of new education legislation and policy.

The ensuing section highlights the national documentation that mandates critical thinking.

1.3.1 Critical cross-field education and training outcomes and critical thinking

Accompanying the change to the entire education system was a significant change that occurred in the form of a series of publications to guide the redress of inequality in education, where

previously there had been few and not uniform for all citizens[2] (Council on Higher Education, 2010, p. 70). Of central interest in this study was the creation of the P-STE national curriculum and public policy documents in which a series of critical cross-field outcomes for education and training were identified to assist in realising the ideals of a new democratic era in education.

> The Critical Cross-field Education and Training Outcomes, commonly known as the Critical Outcomes, are an additional mechanism through which coherence is achieved in the framework. CCFOs describe the qualities which the NQF identifies for development in students within the education and training system, regardless of the specific area or content of learning i.e. those outcomes that are deemed critical for the development of the capacity for life-long learning. These outcomes are intended to direct the thinking of policymakers, curriculum designers, facilitators of learning as well as the learners themselves (SAQA, 2000, p. 18).

Critical thinking is one of the critical cross-field outcomes (CCFOs); one that has expressly been left to practitioners to initiate and implement (SAQA, 2000, p. 17) and it is a commonly held belief "that universities develop a critical attitude in their students" (Phillips & Bond, 2004, p. 277) in South Africa and abroad. SAQA (2000, p. 12) hopes that critical thinking, as one of those CCFOs, is a means to address access, equity and quality in South Africa. It also directly states that practitioners who ignore the CCFOs are irresponsible (SAQA, 2000, p. 12).

1.3.2 What critical thinking ought to do

The National Qualifications Framework (NQF) (Council on Higher Education, 2012, p. 18-19) identifies qualities to develop in students within the education and training system. These are referred to as critical cross-field outcomes for all levels of the education system.

> CCFOs are deemed critical for developing the capacity for life-long learning (SAQA, 2012, p. 18).

SAQA (2000, p. 18-19) describes the qualities of critical outcomes in the points presented hereunder.

- Use critical and creative thinking to make responsible decisions to identify and solve problems.
- Collect, analyse, organise and critically evaluate information.

[2] The House of Delegates (a quasi-representation of the Indian people in South Africa) regulated programmes for teachers racially classified as Indian according to the *Population Registration Act, 1950,* while under the same guise of representation, the House of Representatives regulated programmes for teachers racially classified as Coloured according to the *Population Registration Act, 1950.* The regulations were well defined with the purpose of restricting the knowledge that would be taught to teachers.

- Use science and technology effectively and critically, showing responsibility towards the environment and the health of others.

Given the changes to higher education since the end of constitutional apartheid, I wonder how lecturers have understood and integrated the CCFOs into the design of all education and training programmes. Central to this are the terms, 'critical thinker', 'critical' and 'critically' engaged. CCFOs are so important that a lack of critical thinking and reasoning ability are deemed barriers to learning (Rowley & Slack, as cited in Carmichael & Stacey, 2006) (see Chapter Two). The CCFOs are considered essential because they underpin and enable the development of specific outcomes for learning units within modules or courses in the P-STE programmes.

The requirement to 'think critically' was under scrutiny in this research because it is expressed as if it is imbued with transformational and magical qualities. It is spoken of with authority and conviction by lecturers in higher education. "Critical thinking" appears to have been labelled as a linguistic discourse that is already well-understood and unambiguous (Halonen, 1995). However, on closer examination, it appears as if a multiplicity of interpretations of what the label might indeed be referring to abound (Moore, 2011). Could the label be considered highly flexible, ambiguous and contradictory, often leading to a belief that everyone is already engaging in its realisation in practice? Perhaps it means everything and simultaneously nothing.

1.4 Rationale, problem statement, objectives and research questions

1.4.1 Rationale

Internationally, addressing, utilising and developing critical thinking is espoused as the elixir for higher education (Brookfield, 1987; Ennis, 1993; Giancarlo & Facione, 2001; Halpern, 1999; Paul, 1992). Peters (1973) suggests that critical thinking has been "overworked and under-analysed". The SA national documentation on teacher education at the qualification, vocational and curriculum levels indicates that critical thinking is a desired feature of pre-service teacher education (CHE, 2011; DHET, 2015; SAQA, 2000), as it will produce teachers that can activate this outcome among the learners they will teach – the potential civil and software engineers, lawyers, medical professionals, teachers, economists and politicians that the North American CT researcher, Facione (2011), offers as examples of people we might expect to be strong critical thinkers. A previously-mentioned South African Wits Business School study conducted by Carmichael and Stacey (2006) reports that the critical cross-field outcomes are not pursued sufficiently in programme design or at the institutional level. More

recently, the South African school curriculum offerings have expanded to trades and vocations to meet the needs of a national economic employment plan to move away from only academic subjects. Likewise, the requirement for qualified lecturers in the trades and vocations has intensified (DHET, 2013). The requirement for CT will be expected in the new curriculum offerings. The P-STE programmes will follow suit and the CT will be required of lecturers and teachers in those disciplines also.

Critical thinking is mandated in national documentation and is sine qua non for lecturers who deliver undergraduate modules to know about and integrate critical thinking into their module design and delivery (Halonen, 1995). How to do this is not always well understood (Golden, 2023; Paul, Elder & Bartell, 1997; Scholtz, 2019) and there seems to be a considerable failure on the part of faculty (in this instance, in pre-service teacher education pedagogy) to fully explicate their conceptions of critical thinking (Barnett, 1997; Lloyd & Bahr, 2010; Wagley, 2013). However, in a study by Fox (1994), he credits lecturers in the UK with intuitively knowing what it is and this points to the matter that clarification of CT is a challenge that is not uniquely South African. Many authors of critical thinking literature, some of whom are named here, have focused on the documents that mandate critical thinking (America & Le Grange, 2019; Carmichael & Stacey, 2006), and the pedagogy of critical thinking (Allison, 2019; Bellaera et al., 2021; Golden, 2023; Maclellan & Soden, 2012; McPeck, 1981; Mpofu & Maphalala, 2017). The focus has predominantly been on how students engage with critical thinking (Danvers, 2016) and how it should be assessed (Ennis, 1993; Facione, 2000). Critical pedagogues (Freire, 2000) and critical feminists (Danvers, 2016) and (hooks, 2000; 2009) have broached the factors that influence critical thinking, but the bulk of the literature ignores how lecturers perceive critical thinking to be understood, fostered, and generated or activated and none, to my knowledge, have explored that construction from the perspective of the unique lens and framework of the conceptual theory of the nature of curriculum knowledge and human developmental ecology. Mpofu and Maphalala (2017) explored CT literature to suggest how CT might be encouraged among students and concluded that a series of interventions ranging from socio-constructivist approaches to problem-based learning and reflective thinking might be helpful (see Chapter Two). In the South African higher education setting with which I am associated and in those of nearby higher education institutions, I see critical thinking listed in integrated assessment requirements (Cloete, 2015, p. 3; 6; 90-93). It appears in course descriptions in the study guides for the College of Humanities (University of KwaZulu-Natal, 2021b, p. 24; 29; 30).

My initial encounters with local South African pre-service teacher lecturers revealed that they seem to frequently express conceptions that critical thinking is somehow synonymous with Bloom's taxonomy of educational objectives (Bloom & Krathwohl, 1956) and Bloom's revised taxonomy (Anderson, Krathwohl & Bloom, 2001). Carmichael and Stacey (2006, p. 3)[3] remind the reader that the competencies in SAQA (2000) are expressed in terms of Bloom's taxonomy of educational objectives (cognitive and affective domains) therefore the CT appears to be closely associated with outcomes and assessment.

Within this worldview, "critical thinking" is understood to be a "higher form" of abstracted judgments-making which Ennis (1993) earlier criticised as being a 'vague' interpretation of the complexity of the phenomenon. Researchers assert that critical thinking is misunderstood, unclarified and insufficiently explored (Astleitner, 2002; McPeck, 1981; Moore, 2013; Phillips & Bond, 2004; Sears & Parsons, 1991). This is concerning when the claims against the effects and applications of critical thinking are broad and deeply consequential in terms of the aims and role of higher education for pre-service teachers (P-STs). Clifton (2012) and Halonen (1995) indicate that it is a phenomenon to be demystified, as there seems to be a lack of understanding thereof. Another reason for investigation has its roots in the claim that in the transition of pre-service teacher education training from provincial authority influence to the public university space, the teaching and learning focus has shifted; against policy changes and historical changes, which means that there is a host of factors in play that form a moving base upon which critical thinking is constructed. Across the literature, which is to be discussed later, factors influencing CT can be seen as a vast combination of possibilities.

The potential of critical thinking to assist in redressing the inadequacies and inequalities of the quality and access to education, especially higher education in South Africa, is widely claimed. Critical thinking is intended to ease pathways to address the globalisation of the economy. It is anticipated that critical thinking is inherently suitable for preparing students for the Fourth

[3] "The competency units to be found in the various qualification frameworks cited above may be related to Bloom's domains of educational objectives (Bloom, 1956a & 1956b). All the country-specific qualification framework models include: the skills required to achieve a defined outcome (Bloom's psychomotor domain), certain knowledge underpinning the skill (Bloom's cognitive domain), and a statement of context. However, only the New Zealand (2000) and South African (RSA, 1995 & 1998; SAQA, 2000; Isaacs, 2000) models include references to attitudes, attributes or values (Bloom's affective domain) (Bloom, 1956b). The affective components are difficult to measure, but can be translated into behavioural outcomes, and are key components of the competence of leaders and managers."

Industrial Revolution (4IR) (Golden, 2023). In the COVID-19 pandemic situation which required rapid moves to new ways of teaching and learning and anything else that was required overnight in unprecedented pandemic times, CT was laid claim to as the tool for 'pivoting' to new directions. The centrality of critical thinking has arisen amidst multiple changes in education, to the extent that in South Africa, several universities are encouraging critical thinking and students' engagement to find solutions to their learning challenges (UKZN, 2021b). Since the Covid-19 pandemic critical thinking has continued to be upheld as the elixir of higher education that must respond to the march of influences that have spun knowledge through dangerously fast revolving doors. Notwithstanding the injection of Artificial Intelligence Large Language software models into the academic and public knowledge space, it emits a resounding call for the attention of critical thinking.

Lecturers, perhaps intuitively, know what critical thinking is but may not be clear on how it can be enacted. In the absence of a clear message about what it is, lecturers simply cling to what they know – but what do they cling to and what do they know? It is increasingly vital that this aspect of teacher education is explored.

1.4.2 Problem statement

Currently, CT is mandated, documented and well-intentioned in national curricula and policy documents for pre-service teacher education (see Chapter Two). I hold that the emphasis on what CT is to achieve is not matched by the detail that informs lecturers about what it is or how it should be pursued in teaching and learning. The expectation is that CT is activated against particular types of knowledge in the intended curriculum (see Chapter Two). Knowledge as a phenomenon has been universally and nationally researched and it continues to be so, but CT appears to receive limited attention other than a thin and uncertain mention. Ideally, a coherent understanding of what lecturers construct as CT is required, to commence detailing how CT can achieve its intended outcomes within and possibly beyond the P-STE curriculum. If not addressed, the reported lack of CT (see 1.3) will be perpetuated. It seems that there is shrouded thought on how CT is to be taught in schools and HE and that is unhelpful. It makes sense to seek clarity at the source – from the lecturers. It follows that this may lead to a clearer understanding of how critical thinking might be revisited to suggest how it attains the status afforded it in policy and fulfils its mandate. I, therefore, formulated three objectives.

1.4.3 Objectives

The objectives of this study are presented hereunder.

- To explore the constructions of critical thinking among pre-service teacher education lecturers within the intended pre-service teacher curriculum.
- To explore the evidence of enacted critical thinking in the lectures presented by pre-service teacher education lecturers.
- To explore why pre-service teacher education lecturers' (changing) constructions of critical thinking are enacted the way they are within the pre-service teacher education curriculum.

1.4.4 Critical questions

I posed three critical questions to guide this study.

- What are pre-service teacher education lecturers' constructions of critical thinking within the intended pre-service teacher curriculum?
- What evidence is there of the enactment of critical thinking in the pre-service teacher education lecturers' lectures?
- Why are pre-service teacher education lecturers' (changing) constructions and enactments of critical thinking are enacted the way they are?

1.5 Context

1.5.1 Locale

The study was conducted in a single, independent, pre-service teacher higher education institution (HEI) in eThekwini, South Africa. The degree programmes are regulated by the Council on Higher Education (CHE) and the Higher Education Quality Council (HEQC) in both the public and independent higher education sectors. English is the "lingua franca" (Brenzinger, 2017, p. 49), of the region and the language of learning and teaching (LoLT). Teaching in English is a common feature of higher education in developing countries (Altbach, 2010). The common language helped communicate with participant lecturers in this study despite not all of the lecturers being mother-tongue English speakers. The pre-service teachers are predominantly female, South African students of varied ages and ethnic and linguistic groups enrolled in a four-year bachelor's degree in either Foundation or Intermediate Phase Teaching. The study was conducted at one institution over three academic semesters.

This independent HEI caters for approximately one and a half thousand, fee-paying students from working and middle-income backgrounds. The institution is one of the major independent providers of P-STE in SA and admits fee-paying students to undergraduate programmes. Public universities are unable to fund and accommodate students due to a funding crisis (Pityana, 2009), a trend that Singh (2011) indicates is experienced in post-independence African states of which SA is one. An assumption might be made that the fee-paying students have the cultural and academic capital (frequently associated with higher income earners) to navigate higher education more successfully than public-funded students from constrained socio-economic circumstances. However, that correlation may be difficult to ascertain despite multiple studies having been conducted in South Africa and abroad related to a broad range of factors of influence including access to resources, students' intrinsic motivation, the influence of the student's home circumstances, parental expectations and ability (Poh & Smythe, 2014). In this study, I remained open to the possibility that these factors could influence lecturers' and students' critical thinking equally. In effect, a significant number of the students in the independent HEI in question are first-generation students, a term coined by The First-Generation Commission (Stellenbosch University, 2008); an inclusive South African term for "black, previously disadvantaged or minority students" (Heymann & Carolissen, 2011, p. 1379). The term refers specifically to "students whose parents have no further education after high school" (Dumais & Ward, 2010, as cited in Heymann & Carolissen, 2011, p. 1379). I used the term as inclusive of people with disabilities, minority groups, and women, as set down by the Department of Education (1997). Several of the lecturers in the study are themselves first-generation graduates, which may have a bearing on their work as lecturers constructing critical thinking.

The pass rate of the students in the institution is high despite the 'deficits'[4] frequently encountered in multiple areas of the SA schooling system as reported by Taylor (2019). The lecturers work in an environment that places practice teaching (Work-Integrated Learning (WIL)) at the heart of the institution; the focus is on pre-school, foundation and intermediate phases and high school qualifications at higher certificate, diploma and degree programme levels. WIL is a prominent component of methodology modules.

[4] 'deficits' (in disciplinary knowledge, poor teaching and learning standards in schools, severely differing physical schooling conditions and socio-economic backgrounds) (Taylor, 2019)

The graduates are highly sought after for employment in schools[5], as a result of the intensive work carried out by lecturers who are expected to produce excellence in a profit-driven environment. (Marketing slogans of the institution omitted to preserve anonymity).

The location of this study was of particular interest because the student and lecturer complement comprised both mature people and millennials, who were represented by a cross-section of lecturers. The lecturers were schooled, and academically educated, in the evolving pre- and post- apartheid education systems. The permutations of lecturer and student characteristics are valuable and those factors may play a role in how CT is constructed. The ensuing section presents the context within which the study was conducted.

1.5.2 Lecturer participants in this research

The lecturers selected to take part in this study varied in age and their backgrounds were as varied as the students that they lecture. The lecturer participants (I will refer to them as lecturers from here on) that were the focal point of the research were males and females. Unlike public universities where the male/female ratio of lecturers is almost equal (Breetzke & Hedding, 2018), the lecturers were predominantly females from varied linguistic and ethnic groups. Their professional training paths varied, as did their ages, years of lecturing experience and personal experience of education at the school and higher education levels. They were persons who lectured undergraduate degree programmes in a variety of disciplines in pre-service teacher education. The lecturers were responsible for the design of the modules that they and others present to students which would place them in a position to comment on various aspects of CT in their own modules. (They are also now strongly urged to engage in research although it is not currently a requirement for a position as a lecturer). The level of qualification that lecturers have attained prior to beginning a career as a lecturing academic may influence critical thinking in the design of the aforementioned modules.

They were all holders of post-graduate qualifications at a minimum Master's degree level. A minimum of a Master's level qualification on the National Qualifications Framework Level 9 is significant because the South African, National Qualification Framework (NQF) (SAQA, 2012), Level 7, is the first of the national education level descriptors which indicates an explicit

[5] (anecdotal comments made to lecturer colleagues and myself when we interacted with staff at schools where students from the institution of research are placed for the WIL component of their programme)

requirement to engage in critical thinking. One would assume no lack of encounter with this requirement because the participant questionnaire completed by all lecturers in this study indicated that their degrees were earned since the new postgraduate policy structures were introduced (i.e. since SAQA NQF Level Descriptors (SAQA, 2012) for critical thinking were implemented). Note that I do not state that the lecturers would have encountered critical thinking in a teacher education qualification, as not all lecturers in the study site held a professional teaching qualification.

The lecturers included in the study have invested years in the study in the medium of English, mostly because the choices for study in other languages at the SA HE level have typically been scarce and restricted by HEI language policies. They teach in the medium of English in various disciplines. The language of learning and teaching (LoLT) is English, my mother tongue, and although they speak other South African languages, English was used during the observations that were conducted in lecture rooms, not because it was common to lecturers, students and myself in this study but rather because English is the language of teaching and learning at the selected institution. It is difficult to establish the full range of bilingualism, trilingualism and more language competencies often encountered in the South African HE setting (Ramani, Kekana, Modiba & Joseph, 2007). The immediate advantage was the amount of shared language that was brought to the research context while at the same time avoiding the potential pitfalls of embedded understandings and interpretations (see Chapter Four). The purposive sampling of lecturers included the point that all the participants had to have been raised and have lived in South Africa, as this would imply that their lives were and continue to be deeply influenced by apartheid's political, social, economic and educational arrangements based on race in pre- and post- 1994 circumstances; and recognising that the divisive and severe effects of apartheid did not dissolve immediately after the change from apartheid to a democratic government in 1994. The lecturers in this study were among those who were teacher education practitioners or teachers of old, having been schooled and having studied in pre- and- post-1994 education systems. Furthermore, the participants were selected because of the breadth and depth of information and knowledge they could construct (see Chapter Four).

1.6 Methodology

I aimed to facilitate a deeper understanding of how P-STE lecturers understand critical thinking. This case study research offered lecturer participants specific catalysts for contemplating CT by asking them to identify their enactment in their observed lectures, and

holding discussions in semi-structured interviews (where video recordings of their lecture were used as a catalyst for discussion) to establish how their thinking is rationalised and informed. I acknowledge that the case study, which falls into the qualitative research paradigm, contained a limited number of participants. Limiting the number of participants can be perceived by methodologists who favour quantitative approaches to be insufficient, unreliable and of weak validity because it elects not to make use of swathes of quantitative data that are purportedly more certain, transferable and verifiable. A small number of participants was precisely what was required. Individual lectures were observed and recorded; semi-structured interviews were held to discuss the CT that was considered to be present in the lectures. The discussions of the interview were invaluable. Details of each participant were created through sifting, re-organising and thematising data obtained from documents, observations and interviews to provide rich descriptions and findings. The data were drawn into thematic descriptions that captured the possibilities of the details of the lecturers' sharing about constructions of critical thinking (see Chapter Five).

1.6.1 Procedures for lecturer participation

Lecture observation and semi-structured interview discussions led to discussion about the ideas related to CT revealed in lecture videos. The interview transcripts were transcribed for analysis. Thematic analysis, which is suited to a qualitative, interpretive approach to research, was employed. The limited number of participants allowed me to focus on the details of each and draw the data into themes. Rich descriptions resulted in the capture of a variety of details of the lecturers' constructions of the phenomenon under investigation.

The ensuing section introduces the researcher's positionality in the study.

1.7 Researcher positionality

I, as the researcher, approached the research from the perspective of a mature female of English-speaking immigrant stock. I am bilingual with Afrikaans as a second language studied at school, as was compulsory for all race groups dependent on the provincial language policy, but across-the-board for white learners. I spent thirty years in the apartheid environment as a school pupil/learner, teacher-in-training, teacher and manager. I am a product of the 'technical training' offered in a teacher training college from which I graduated in the mid-1980s. During the four-year undergraduate training, my major subjects were Afrikaans and Geography; while my minor subjects were Biblical Studies, and IsiZulu (which I can speak, understand, write and

read with some proficiency). In the mid-1990s I left South Africa. During fifteen years abroad as a teacher and manager, I completed a Master's degree at a public, research-intensive university in the United Kingdom and am now reading for a doctoral degree at a university which is an example of the incorporation of a segregated, whites-only teacher training college (my alma mater) and a research-intensive university (Samuel, 2016). My experiences with education national and international curricula abroad (Botswana, England and Wales and the United Arab Emirates) provided exposure to curricula and cultures that differed strongly from the confines of an earlier, South African lived experience in the apartheid era and first years of democracy. In 2010, I returned to South Africa and have spent the past fourteen years in the post-apartheid era as a lecturer and manager in two higher education institutions (HEIs). I am interested to see how my proximity to the situation in which CT must operate, could provide new and different (if any) conceptions of how and why individuals within the independent HE system of pre-service teacher lecturers construct and claim what has influenced their constructions of critical thinking. Hopefully, uncovering an understanding will contribute to the expectation that "the quality of teacher education and development [that is expected] will be improved over time." (DBE/DHET, 2011). [My emphasis].

My accumulated knowledge of the phenomenon and the institution and my proximity to the institution should be advantageous in many respects, notwithstanding access. I would consider that holding perspectives other than those of a South African educator who has remained within the confines of the education system in South Africa, equips me with different perspectives from which to observe and discover how lecturers view CT and how lecturers have arrived at that understanding.

Having studied in both college and university contexts, perhaps I have some understanding of how lecturer enactment of preparing teachers to think critically may vary or be similar and what factors are in force that influence their ideas about critical thinking. I do not have the scope for understanding how those expectations of the interface between diverse lecturer and student experiences can infiltrate the task of engaging with critical thinking.

1.8 Theoretical lens

The theoretical lens which frames the study, in keeping with the conventions of a philosophical doctorate, utilises the theories of critical thinking in the Western university tradition, specifically from higher education perspectives (see Chapter Two), and combines that lens with

the dynamic conceptual forces of reactive and active currere (Pinar, 2011; Wallin, 2010) as a means to view discussion about the nature of knowledge in the curriculum in South African pre-service teacher education (see Chapter Three). To delve deeply into multiple internal and external influences of varying intensity that might be extant on lecturers in the South African P-STE context, the conceptual factors influencing teacher development in a South African context were utilised from the Force Field Model of Teacher Development (FMTD) (Samuel, 2008) (see Chapter Three)). Lecturer critical thinking, when viewed from the ecological systems perspective of the FMTD, draws on developmental psychology understandings of influences on lecturers (as well as teachers) and is considered an appropriate guiding framing for this study on critical thinking. An amalgamation of conceptual and theoretical elements of the two theories is intended to provide structure for the development of the critical questions and the design of methodology for exploring critical thinking where the foci might otherwise be too vast. By means of focus from an amalgamated theoretical lens, lecturers in this study are situated as persons in the context of knowledge which is directed by policy and curriculum. The policy and curriculum are viewed in relation to contextual influences and situatedness, while the pedagogy of critical thinking plays out in arenas of change over time – the influence of one on the other can be analysed more thoroughly by utilising three sets of theoretical concepts.

1.9 Significance of exploring critical thinking among lecturers

Observing lectures and interviewing lecturers at work with undergraduate, pre-service teachers (PSTs) provided an opportunity to explore what is understood about the concept of critical thinking. The relevance and importance of a thesis exploring lecturers' constructions of critical thinking in pre-service teacher education arose on account of the promise with which critical thinking is imbued. CT is devised for the capacity-building of pre-service teachers, who will in turn teach children in schools. Critical thinking itself is documented in national policy and curriculum documents as serving an agenda of redress, quality-constructing and equitable access to collective economy-building in a local and global sense (Scholtz, 2019; Van Schalkwyk, van Lill, Cloete & Bailey, 2022) and in addressing multiple demands related to a digital existence which have arisen in the past decade in South Africa and abroad. The lecturers are charged with this responsibility. Their contributions will be invaluable in shaping an understanding of how the mandate of responsibility and action is fulfilled. The significance of these findings is to provide theoretical insights into how the relationship between policy and the enacted curriculum is being informed.

1.9.1 Delimitation of the study

This study was located in a single case study site, that of an independent P-STE higher education institution (HEI). Within that single site, I built six participant lecturer cases (all holders of Master's qualification and one almost-concluded PhD qualification) (see Table 4) in which data were generated through a variety of methods, namely biographical questionnaires, lecture observations, semi-structured interviews and field notes. The single-site case study circumscribes the study's site and situation and suggests that the multiple methods employed for data collection and generation are useful in complementing and confirming the authenticity and trustworthiness of data generated in the field. The exploration of a small sample of lecturer constructions and enactment of CT constructed in this way offered insights into a cross-section of participants with varied and rich contributions. Although the study was confined to one site, a range of views, understandings and practices related to CT were represented in depth. The creation of new theoretical understandings must be fed by complexity and treated as complex, which the in-depth case study offered. However, the participants are few and specific to a small and limited context of P-STE but its intention is not to attempt a wide or generalised representation, nor to extrapolate the findings and interpretations, into other contexts.

1.9.2 Trustworthiness

My proximity to and relationship with the participant lecturers could have influenced how they presented their lectures, their reaction to my presence in their classroom and how they thought they should express their thoughts about critical thinking. A variety of methods were utilised in the research design, namely document search, observation, listening, discussion and reading to assist with interpreting the data that were gathered in the field. This was particularly relevant during the data analysis and interpretation stages because robustness and authenticity must be maintained in a study when a time constraint prevents the researcher from verifying the data with the participants. Verification of data is a strong component of interpretive analysis but it was not possible to adhere to this preferred approach to the extent that one usually might. The data that are presented can only be considered trustworthy if they are authentic, plausible data that are representative of the participants. The trustworthiness of the data is also reliant on the duration and depth of engagement with data from the field. It was a strong feature of this research as there was time to work on multiple deliberations and iterations of data reading. It cannot be emphasised sufficiently to say that the theoretical views of the data in analysis and interpretation were explored in depth and breadth before it being possible to be able to come

to an understanding of critical thinking. One of the strengths of thematic analysis is the component that encourages reflexivity on the part of the researcher to reduce bias as far as possible. The processes employed to mitigate the very being of a human researcher is covered in the methodology chapter (see Chapter Four).

1.9.3 Ethics

The participants' and HEI's anonymity were maintained in this report and care was taken to follow the ethical procedures prescribed by the university to protect participants by ensuring their informed consent to participate in this study. The study was conducted among professional adults and all were informed of the intentions, expectations, use, rights and responsibilities of the participants and the researcher. The participants were informed of their right to withdraw from the research at any time and it was clearly stated to participants that the services of a counsellor were on hand to attend to emergent issues that might arise in terms of stress or triggers.

Ethical clearance to conduct this study was sought and granted by the institution in which the research was conducted and before work in the field commenced. The data generated in the research process are kept in private electronic files and will be placed in a private store for the required duration after the study is concluded.

1.10 Overview of the thesis

This thesis comprises three parts. Part One is to set up the study. Part Two is to learn from the fieldwork and Part Three is to move from data to theory. In this overview, I offer an outline and summary of the eight chapters in the thesis.

Part One comprises Chapters One to Four

1.10.1 Chapter One

Chapter One introduces the phenomenon, of critical thinking as a focus of higher education across the globe and specifically in South African Higher Education where its intentions in pre-service teacher education are explicated. A metamorphosis of pre-service teacher education within the wider higher education space contextualises the study from an historical perspective. The formalisation of critical thinking as a critical cross-field outcome of education policy and curriculum is introduced. It is established that the lecturer is responsible for critical thinking. The matter of policy implementation and policy intentions surfaces as a matter which must

receive attention in this study. The rationale, problem statement, objectives and research question created for pursuing insights into critical thinking capture and direct the purpose of this study. The locale and population of the institution in which my study is conducted are described in detail.

A rationale for the selection of characteristics of the lecturers is followed by the discussion of my positionality as a researcher in which I juxtapose and highlight our collective effort and involvement in exploring critical thinking. The theoretical framing of the study is declared as a literature review focussing on the philosophical, cognitive psychology and praxis aspects of CT; specific concepts of the positive conceptual force of currere (Pinar, 2011; 2016); and the conceptual force principles of the Forcefield Model of Teacher Development (Samuel, 2008). The methodological design, paradigm and methods for research are presented. The data collection methods, data generation, and thematic analysis are preparation for data analysis of the participant data that engage the specific conceptual perspectives of the theoretical framework. The significance of the study is explicated, and attention is given to setting out the trustworthiness, delimitations and the importance of ethics. An overview of the chapter is where the intentions of this study are set down.

1.10.2. Chapter Two

In Chapter Two, the literature review establishes a conceptual framework for the understanding of critical thinking as researched nationally and globally. The relationship between knowledge and critical thinking is discussed in terms of ancient, international, national, institutional and individual perspectives across historical time. I establish that the complementary nature of knowledge and critical thinking is significant in this study, based on document analysis of the curriculum and policy documents that contain the mandates for critical thinking. I establish that the foundational principles in which knowledge and CT for P-STE are rested, are similar. While the similarity might seem obvious and unimportant, questions arise about the implications of such an ontological relationship of knower, knowledge, and CT in a diverse and complex SA setting, where decolonisation, Africanisation and a host of other factors challenge the legitimacy of knowledge and CT which are central to education transformation endeavours in South African HE.

This chapter explores the phenomenon of critical thinking as theory and praxis over time and how it has been characterised by the philosophical, contextual and praxis integrations presented in a higher education environment. In parallel, the document analysis of national curriculum

and policy documents establishes who is responsible for CT implementation. It is found that CT is named and its application is indicated but what it is and how it is to be taught is not explicated. The chapter contemplates how the lecturer comes to be aware of the requirement of the CT CCFO and, hence, how policy might be read and interpreted. This foregrounds the possible influences of constructions and enactment of critical thinking. The chapter motivates for a new study to reveal how lecturers understand CT which holds a high status as a CCFO in education.

1.10.3 Chapter Three - Theoretical Framework

The theoretical lens which frames the study, in keeping with the purpose of a philosophical doctorate, utilises the theories of critical thinking in the Western university tradition, specifically from higher education perspectives (see Chapter Two), and combines that lens with the dynamic conceptual forces of reactive and active currere (Pinar, 2011; Wallin, 2010) as a means to view discussion about knowledge in the curriculum in South African pre-service teacher education (see Chapter Two). To delve deeply into multiple internal and external influences of varying intensity that might be extant on lecturers in the South African P-STE context the conceptual factors influencing teacher development in a South African context were utilised from the Force Field Model of Teacher Development (FMTD) (Samuel, 2008) (see Chapter Three). Lecturer critical thinking, when viewed from the ecological systems perspective of the FMTD, draws on developmental psychology understandings of influences on lecturers (as well as teachers) and is considered an appropriate guiding framing for this study on critical thinking. An amalgamation of conceptual and theoretical elements of the two theories is intended to provide structure for the development of the critical questions and the design of a methodology for exploring critical thinking where the foci might otherwise be too vast. By means of focus from an amalgamated theoretical lens, lecturers in this study are situated as persons in the context of knowledge which is directed by policy and curriculum. The policy and curriculum are viewed in relation to contextual influences and situatedness, while the pedagogy of critical thinking plays out in arenas of change over time (contextually and individually) – the influence of one on the other can be analysed more thoroughly by utilising three sets of theoretical concepts.

1.10.4 Chapter Four – Methodological Design

Chapter Four is shaped by the theoretical framework which has provided critical questions in Chapter Three. It provides an introduction that explains that the goal of a methodological

design is to consolidate the data gathered via various methods into an expanded understanding of lecturers' constructions of critical thinking. It declares, identifies and rationalises the interpretive paradigm and explorative approach in the research design for this study The selection of data sources and design of data collection instruments is as follows: institutional database, institutional curriculum documents, national curriculum and policy documents, biographical questionnaire, lecture observation, semi-structured interview schedule. The data collection and data generation methods section frame the methods used for extracting critical thinking references/meanings from national and institutional curriculum and policy documents. The theoretical justification for choosing a case study design is- offered. The selection of participants is explained. Consideration is given to preparation for entry into the field to study CT in the field draws on theory (conscious-laden observation (seeing) and semi-structured interviews (hearing and listening)) and researcher positionality. The method of semi-structured interview is provided and the relevance of the use of field notes and memos is discussed. The chapter covers how the trustworthiness of the research is achieved through reflexivity. The important aspects of consideration of ethics of this research are provided. The thematic analysis process is described in detail and the achievement of higher forms of analysis is explained. The limitations are outlined, and a chapter synthesis is given of the methodological design for empirical research in this study.

Part One concludes with a discussion and a design for empirical research, which leads to the analysis of case study data in Part Two (Chapters Five and Six).

Part Two comprises two chapters in which the data are analysed.

1.10.5 Chapter Five

Chapter Five, is one of two data analysis chapters

The chapter reports the CT (declared) in institutional documents of each of the four modules. In this Level 2 analysis stage, critical thinking shown in institutional documents is reported on an individual basis to establish what and how lecturers declare CT which will be implemented in their lectures. The interview data on the lecturer expressions of CT are taken initially from six separate lecture observations and six separate semi-structured interview transcripts which record discussions about the observations. Firstly, reports of how knowledge is viewed by each lecturer are discussed briefly to establish which foundational principles underpin the knowledge of the discipline. A link is made between knowledge sources used by the individual

lecturer in the teaching and learning of the discipline as noted in the interview transcripts. Secondly, the study letters of each module selected for inclusion in this study are analysed to establish how lecturers identify CT, how they declare CT in relation to how they enact CT in lecture observations and how they discuss their enactments in interview data. It is intended that pedagogy reveals much about lecturer CT in the pedagogical approaches used (as discussed in interviews that are based on footage of the lecture observations).

The reflections across the participants draw re-presentative themes of thick description of the relationship of factors that influence lecturers' activation of CT. The themes are formed which are further analysed to create consolidated key issues that participants raise about their constructions and enactments of CT.

1.10.6 Chapter Six

Chapter Six is the second of two chapters that present the Level 2 data analysis portion of the study. Level 1 analysis drew on data extracts from interview transcripts. This involved close reading and skimming and scanning, shading and initial coding and grouping of ideas. Level 2 analysis involved interview data extracts being drawn into data chunks (Braun and Clarke, 2006, p. 79) and then into key themes that were determined by the amalgamation of the six participants' comments and actions. Discussions around the findings led to groups of meanings being interpreted around each participant's messages. The introduction establishes that the data were analysed and interpreted as accumulative, per participant, across two chapters. The data originated from field observation and interview transcripts and the focus was on critical thinking. The focus of the analysis and interpretation is why lecturers construct and enact CT the way that they do. The analysis reports as follows a) the case of discipline as the main driver of CT. b) the experience of home and higher education drove the CT with students c) socio-cultural and academic targets in a P-STE environment were drivers of CT. The analysis of the claims about what influences ideas about the constructions and enactment of critical thinking follow. Themes that show the influence of home, school, higher education and previous experiences of teaching and learning of CT. The reflective interpretations of each participant are compared and contrasted and worked into themes while preserving the integrity of the participant details.

The synthesis signals the end of Part Two and paves the way for combined data from the past two chapters to enter theoretical and conceptual discourse related to points extracted from the

relevant literature on the theory and practice of CT and a range of influences that shape lecturer CT.

Part Three comprises Chapter Seven and Chapter Eight

1.10.7 Chapter Seven

Chapter Seven deals with the understanding of the data about the phenomenon of CT. The data are drawn from amalgamated participant lecturer data sets created in Chapters Five and Six. The data sets, reported in themes are distilled by engaging in theory-driven analysis led by arrangements of assemblage (Deleuze and Guattari, 1987, 1994, 2008). A curated set of concepts of assemblage are explained as the framing of Level 3 analysis – elements of territorial assemblage - planes, territorialisation and deterritorialisation, relational lines (lines of flight), truncation, and bifurcation. Aspects of the framing offered in earlier chapters by the active force of currere (Wallin, 2010) and the Forcefield Model of Teacher Development (FMTD) (Samuel, 2008) are retained and combined with the concepts of assemblage to support discussion in the final chapter of analysis and interpretation.

As a catalyst for distilling the complexity of connections of the themes of CT being brought to this final chapter the assemblage (Deleuze & Guattari, 1987, 1994, 2008), a territorial assemblage completes the lens for this study. Its promise is in the movement, direction and organisational structure (flexible) in which interpretations and conclusions about lecturer CT in this study are shown to be mobile, flexible, fluid and even contradictory.

In Chapter Seven, the naming and planning for CT are explored where it is considered how pedagogy drives CT. This section addresses the themes of discipline as a driver of CT, while lived experience might be considered a significant component (an inbound line of flight) for CT. Lines of flight outbound are typically more emphasised than those inbound; I suggest that the lines of flight inbound are of more significance than they are given credit for in contributing meaning to the construction of CT as a territorial assemblage of the lecturer. The concept of deterritorialisation bifurcation, is called on to assist in understanding how the concrete elements and relational lines of CT assemblages at different levels, and on differing planes become static or redirected to create new assemblages.

This theory-driven analysis approach assists in determining what influences the lecturer constructions and enactment of CT. Assemblages is not a new theoretical framework, but it is

a framework on which fresh, analytical deliberations about CT are based. A treatise on CT is finalised in Chapter Eight.

1.10.8 Chapter Eight

Chapter Eight draws the discourse positions presented in Chapter Five and Chapter Six into a new conceptual framework within which lecturers can reflect on their position on critical thinking in pre-service teacher education. There are six sections in the chapter. The first section presents a general overview of the study and directs attention to the critical questions, explains new philosophical insights and identifies the new learning for the targeted audience. The second section outlines the implications of the thesis and emerging points for thought or action. The third section addresses new insights and philosophy and offers a new framework to expound on lecturers' constructions of critical thinking in relation to their national mandate to activate critical thinking. The fourth section identifies the study's limitations and methodological considerations. The fifth section presents concluding remarks and the sixth section suggests directions for future research.

1.11 Chapter synthesis

In Chapter One, critical thinking was established as critical in South African education. It is imbued with hope for advancing the transformation of education in South Africa, as signalled in the re-set and regulatory revision of the entire education qualifications framework implemented in higher education in post-1994 South Africa.

I suggest that the paucity of guidance, and dearth of focused research literature on critical thinking, that takes into consideration South African lecturers' constructions of critical, may pose the potential threat to the imperative for transformation. This study draws attention to the reality that the mandate for critical thinking is officially assigned to lecturers in public and independent higher education institutions to initiate and implement, without them having been asked about their understanding of critical thinking. Their understanding of CT will require an exploration of various contextual and theoretical aspects thereof. I assume that lecturers are well-placed to think and talk about critical thinking.

On account of that assumption, I pursued an understanding of the phenomenon of critical thinking as theory and praxis in the ensuing chapters of this study (Part One) and explicate how the study was framed and conducted. This is the commencement of an in-depth study of how

critical thinking occurs and is constructed, and how a selected group of pre-service teacher lecturers' insights can broaden or deepen the understanding of critical thinking.

The ensuing chapter explores current broad understandings of CT and begins to discuss how critical thinking prescribed for pre-service teacher education programmes of study could be intersected at national, institutional and individual levels that shape the P-STE environment.

CHAPTER TWO – LITERATURE REVIEW OF CRITICAL THINKING

2.0 Introduction

This chapter presents a literature review that engages critically with empirical and theoretical literature on critical thinking (CT). It delineates the boundaries of reference for CT and clarifies the historical emergence of recorded versions of the ancient foundational principles of CT. Establishing the origins of critical thinking in a brief historical context situates CT in the Western university traditions.

The literature on CT in this chapter offers broad theoretical, abstract, and praxis perspectives across various phases of education in South Africa and internationally. It creates a broad framework for understanding CT, focusing primarily on higher education where pre-service teacher education (P-STE) lecturers conduct their work, particularly from the perspectives of philosophy and cognitive psychology in education. The study is framed by the understanding of CT expressed in this chapter.

Although the literature is broad, a focussed approach enhances rigour, uncovers gaps, and raises questions and considerations. The chapter establishes how post-1994 South African education curricula and policy documents mandate CT as a critical cross-field outcome (CCFO). Questions about who is responsible for CT and its manner of implementation in alignment with policy intentions are addressed.

The literature review identifies key questions and provides a platform for understanding how CT is constructed and enacted by education P-STE lecturers in an evolving P-STE environment, spanning pre- and- post- 1994 eras in SA education.

2.1 Overview of the chapter

This chapter consists of eight sections. The first section provides an overview (2.1). The second section presents a historical unfolding of critique originating from ancient schools of philosophy, situating knowledge and critical thinking within the traditions of Western universities. The role of teacher education is discussed briefly as a vehicle for consolidating apartheid ideals, particularly concerning the nature of knowledge prescribed for P-STE and the place of CT. CT is seen as deeply rooted in the Western university tradition (WUT), raising

questions about how pre-service teacher lecturers have negotiated the evolving social, political, and economic landscapes and any knowledge and critical thinking transitions over time. This transition is central to understanding how pre-service teacher lecturers keep pace with the transformation agenda, which currently includes CT as a desired outcome. The chapter briefly introduces the possible effects of current challenges to CT, including decolonisation, globalisation, and digitalisation of knowledge, highlighting the increasing complexity of negotiating CT (2.2). The third section establishes the vocabulary of CT, beginning with the term "critical" (2.3). The fourth section introduces a range of national and international literature addressing CT theory, approaches, and praxis in the HE environment from philosophical and cognitive educational psychology perspectives. This subsection explains how definitions, constructions, and theories of CT intersect and evolve from earlier philosophical and cognitive psychology theories. Questions about how theory and praxis in CT literature relate to curriculum knowledge, educational trends over time, and their appropriateness for addressing the knowledge encountered in SA's transformation agenda in HE are addressed (2.4).

The fifth section discusses nationally mandated curriculum and policy documents addressing CT, drawing from an early document analysis. This analysis interprets how CT is directed and discusses who is responsible for its implementation. The application of CT is perceived to be influenced by three factors: whether documentation ensures awareness, whether the intended outcomes reach lecturers, and whether these outcomes are applied effectively in pedagogy. The preparedness of lecturers tasked with CT implementation is also discussed (2.5). The sixth section questions the application of CT, conceptualised as its transferability to the broader educational environment within the discipline and beyond the academy. This interrogation lays the foundation for discussing the focus of CT as directed by lecturers (2.6).

The final section synthesises the discussion. While acknowledging the vast scope of CT, the researcher reiterates that this study's theoretical framework is confined to philosophical and cognitive psychology perspectives in education. These multiple theoretical and praxis understandings situate CT within the national context and WUT, which have shaped foundational principles of knowledge and CT in SA HE for decades. The literature reveals how lecturers elsewhere conceptualise and enact CT, highlighting the need to consider perspectives beyond the WUT. Curriculum and policy documents outline the position lecturers must adopt

concerning CT. However, questions remain about the evolving HE environment, the need and pace of change, and how lecturers have interpreted and negotiated CT within this context (2.7).

2.2 An introduction to critical thinking in the Western university tradition

Classicist cognoscenti from the ancient Greek schools of philosophy and education (4th century B.C.E) are credited with laying the foundations for knower-knowledge relationships and CT, revered in Western universities. The term "Western university tradition" (WUT) is employed in this study to reference the traditions arising from the description provided[6]. Socrates premised the critical enterprise on the dichotomy between knowledge (episteme) and belief (doxa), with the former being an internal, individualistic predisposition and the domain of philosopher kings. Plato referred to it as metaphysical knowledge, providing context and content comparison for asserting authority among the elite (Berlin, 1991, p. 4). Doxa, in contrast, was considered a common belief accessible to all (Biesta & Stams, 2001, p. 57).

Socrates viewed ways of knowing as hierarchically positioned based on their content and accessibility to various individuals and groups. Socrates, Plato, and Aristotle (widely regarded, among others, as the fathers of Western philosophy) were learned individuals who accepted and contemplated the knowledge of their era (Berlin, 1991, p. 5). The founding fathers emphasised that understanding the fundamentals of canonical knowledge was essential for engaging in CT (Biesta & Stams, 2001, p. 58). Critical thinking was perceived as a means of managing and engaging with the various forms of knowledge available to prospective learners, scholars, and the broader populous.

It may be argued that the bonds between the philosophies of the known world and the conception of an "educated person" were formalised with the establishment of universities in the 11th century. The power of individuals and the power of groups became intricately linked at the advent of the university system. This treatise acknowledges and seeks to understand, to some extent, the presence of philosophical foundations not rooted in the WUT. In Western political realms, classicist views of knowledge endured into the medieval period. Knowledge came to be defined in terms of prescriptions critical for exploring metaphysical forms,

[6] Later, I question the relevance of WUT for the present localised South African context.

recognising that an individual holds a particular relationship with metaphysical symbols (Mignolo, 2006).

During the medieval period across Europe and the known world, knowledge was regulated by the reigning church authorities and benefactors; the locus of control remained confined to the elite. After the medieval period, a shift from formulated doctrine for the masses toward individual thinking began to take root. This shift involved resisting and contesting existing knowledge to develop and adopt new ideas. It may also be argued that universities (higher education), particularly those associated with Western thought, were founded on the rationale of developing and promoting CT.

The emergence of CT continued to be encouraged within and beyond the bounds of the pervasive authoritarian structures of the time, most notably with increasing emphasis on the individual via universities' organised curricula. The evolution of what constituted knowledge and how it was critiqued advanced into the Age of Enlightenment (Withers, 2007). One example is the considerable contributions of the philosopher Kant from the transcendental school of philosophy. His ideas significantly influenced the fibre of the current schooling system (Mignolo, 2006) in South Africa (Devroop, 2016) which provides a catalyst for questioning that suitability among a diverse group of P-STE lecturers. One of the main tenets of Kant's philosophy is the individual at the centre of learning which is incongruent with an African communalist view of learning and thinking. The centrality of the individual questions the suitability of the foundations of philosophical thinking for the diverse population of students and lecturers. Consideration of the foundations of knowledge and critical thinking are synonymous and worthy of exploration in this study. My study will elaborate on the broader influence of African conceptions beyond individualist thinking.

Kant proposes that the position of the knower concerning knowledge should prioritise the individual, asserting that becoming knowledgeable relies on the motivation of the self and that knowledge exists independently of the individual. Knowledge is infinite, and humans' experience of it can be extended by exercising judgment on anything. Kant's work emphasises the importance of reason, ethics, and the individual's duty to pursue knowledge rationally and systematically, driven by the belief that this is an inherent obligation. He argued that exercising judgment depends on the individual's recognition that they cannot be separated from the knowledge they possess.

Devroop (2016, p. 37) explains Kant's belief: "If it is our living totality, then we must be aware that life gains access to itself as a phenomenon through our lives". This quote typifies the individual endeavour to become educated, implying that once knowledge is pursued, it becomes integrated into the self without the option to undo what has been learned. The Kantian perspective on education assumes CT to be an integral part of the education endeavour.

Understanding CT involves several steps, the first of which is interrogating the relationship between the individual and knowledge. This relationship is theorised as one where the individual actively pursues knowledge. Western philosophers have traditionally taken an ontological stance that either places mankind (sic) at the centre of endeavours or focuses on a metaphysical higher power as the core of human understanding (Bandura, 2006). Kant, for example, proffers that a drive arises in the relationship between the individual (self) and the metaphysical, characterised by a transcendence of the self in relation to the other.

Kant holds that individuals continually seek that which transcends the self, for example, striving to be god-like or pursuing truth – driven by dissatisfaction and an aspiration to achieve perfection (a dualism of transcendence). In the ontological shift from a deity towards the individual (or human), Kant advances the idea that individuals should "dare to know" – *sapere aude* (Wallace, 1882). Daring to know is a deliberate effort to break free from controlling forces.

During Kant's time, this shift from deity to individual did not entirely undermine the power of reigning authorities and was not received favourably by them. In the 18th Century Age of Reason, a new "liberated" era emerged where individuals were encouraged to employ their minds. In the ontological positions proposed by thinkers such as Descartes, Spinoza, Locke, and Leibniz (Mastin, 2009), the "self" becomes increasingly separate from the metaphysical being and the environment.

In the scientific era, knowledge and critical thinking came to be equated with the sapience of scientific inquiry (Berlin, 1991, p.5). Knowledge became epistemologically[7] and ontologically[8]

[7] An epistemological focus (within this worldview) entails asking what knowledge is, how it is acquired and how people know that they know (Halpern, 1999).
[8] Ontological foci (within this worldview) involve what exists in the human world about which we can acquire knowledge. Such discoveries lead to beliefs that guide action (Moon & Blackman, 2014).

focused on verifiable truths, with scientific evidence as the yardstick for affirming justified, true belief. As access to knowledge shifted from a privilege of the elite in Europe to a resource for the wider population, the locus of control shifted simultaneously. Nevertheless, the individual remained central to the pursuit of knowledge, and the dualism of transcendence persisted as a framework for understanding the motivations and limitations experienced in this pursuit.

Deliberate thought about knowledge continues to serve as the yardstick for developing education, with accompanying action required to make knowledge valuable. The second tenet of the WUT is individualism.

2.2.1 The solitary individual of the Western university tradition

Within the theoretical approach of individualism, scholars have produced a considerable amount of literature with diverse views in search of greater clarity about the form, meanings, and purpose of thinking as an individual engaging and activating knowledge. It is significant in this study that, in the WUT, as exemplified by Kant, the individual is consistently conceived as "a solitary figure with a furrowed brow, deep in thought" (Thayer-Bacon, 2000, p. 17), perceived as being in thought and dialogue with knowledge.

Individualism, a focus of concern for post-colonial commentators in South Africa and on the African continent, is viewed as incongruent with African societal organisational patterns. The African Ubuntu philosophy (Odora-Hoppers, 2022) highlights a more fluid existence of the individual (self), an existence that largely eludes dualism. The ontological fluidity of the self (mind, body, and soul) and the metaphysical holds the self and the cosmos as one (Seroto & Higgs, 2024) – an "otherness" uncommon to the WUT (Higgs & Letseka, 2022).

How, then, does the exploration of knowledge and CT within the broader educational framework seek to serve all South Africans, including those whose perspectives are incongruent with Western perspectives? The historical roots inherited from the WUT become significant when contemplating knowledge and CT in this study. This raises questions about the ontological positioning of lecturers (and students) in SA pre-service teacher education, especially lecturers (individuals, enduring as a central concept) who have most likely been steeped in WUT through formal learning. This study chooses, therefore, to make more explicit what frames of reference from within and outside WUT lecturers may use when conceptualising and enacting their view of critical thinking.

Kantian theory asserts that philosophical thoughts about knowledge and thinking should be valuable. Usefulness is brought about by the self (an agent). Shifts in the possession and access to knowledge were encouraged by significant agents such as 19th- and 20th-century philosophers, including Heidegger, Popper, Kant, Dewey, Freire, Vygotsky, and Nietzsche, all of whom were influenced by Hegel (b.1770-1831), with Hegel himself following Kant. Hegel (1812/1969) declares that Kantian theory, on which he rests much of his theory, presupposes that the thinker consciously acquires knowledge.

The pursuit of knowledge in the WUT has continued since the establishment of the university, remaining intentional, structured, certified, and underpinned by its philosophies. Over time, and building on Hegel's brilliance, figures such as Marx (b.1818-1883), Dewey (b.1859-1952), Giancarlo and Facione (2001), and Ennis (1993) provide examples of iterations of theory that address agency, knowledge, and critique within their respective contexts (Devroop, 2016).

The intensification of critique and CT as a means of scrutinising knowledge and knower relationships in historical contexts has met with varying responses from power structures of the recorded and remembered past. Such discussions serve the purpose of considering theories about knowledge, its relationship and power dynamics, and the role of critical thinking in these settings. Not only may the individual pursue critical thinking at different scales and intensities, but CT may also have been met with a range of permissions and consequences, such as those detailed below. This present study, therefore, elaborates conceptions of power dynamics which enable or constrain conceptions and enactments of critical thinking. These dynamics of power are a gap in extant studies about critical thinking.

2.2.2 A brief historical perspective on knowledge and critical thinking in South African pre-service teacher education

In varying degrees and intensity across the vast region of present-day South Africa, history has been characterised by colonial activity as the recorded history and the dominant, anointed narrative, while "other" histories have been ignored, marginalised, or erased (Amin, 2016; Seroto & Higgs, 2024; Thompson, 2001). Of immediate interest is South African teacher education as a subset of HE. Education was designed to subjugate individuals into ways of thinking aligned with the philosophical and religious views of Europeans. Such education was propagated in ways that were far from equal, accessible, open, or critical. Instead, it was curated to meet agendas that suited the government of the day. This involved the control of schooling following religious missionary and European ideals of education. Throughout, the paradigm of

the WUT prevailed. How these historical subjugations influence critical thinking has been identified as a gap in present literature and is foregrounded in this study's focus.

In the early 20th century, the industrialising nation of SA saw segregation institutionalised to marginalise black workers in favour of white workers. Segregation laws were enacted to afford the white population advantages in all spheres of life. Following the 1948 general election, the National Party formally implemented its apartheid plan. Partially constructed plans from the segregation era continued. Intensified and new legislation further disadvantaged and entirely disenfranchised the black population (Giliomee, 2003).

The direction of South Africans' lives over the ensuing fifty years was established (Thompson, 2001). Through institutions such as the church and education, the apartheid state enforced its ideological agenda and justified its laws and policies. Teacher education became an integral part of consolidating the apartheid plan.

In the mid-20th century, South African teacher education curricula, under the apartheid education legislation and policy were purportedly infused with "modern international trends" (Samuel, 2008, p. 5), which at the time were technicist, rationalist, and suited to providing the rapidly industrialising nation with a workforce of labourers. Knowledge increasingly aligned with the expected roles that different racial groups were designated to perform in the economy (Thompson, 2001; Vithal, Adler & Keitel, 2005), as envisaged in the capitalist Nationalist Party agenda (Carrim, 2015).

HE for black individuals was severely affected by the passing of the Bantu Education Act of 1953, followed by the Extension of Universities Act No. 45 of 1959. The legislation was designed to racialise HE and severely restricted access to knowledge (Thompson, 2001). Le Grange (2014) posits that the restrictions stemmed from fear of widespread HE access for black individuals. In line with this HE agenda, which sought to permit only limited access to knowledge based on race, pre-service teacher education (P-STE) was divided into racially segregated colleges. The mandated curriculum knowledge was "packaged" (Jansen, 2005) for delivery in a "technicist[9]" fashion (Devroop, 2016, p. 31; Msibi, 2016).

[9] Technicists apply expertise to the management of society that replaces the university's knowledge-management function. This is characterised by establishing and testing norms and building critical consensus through their

This technicist trend required teachers to deliver knowledge as a product aligned with economic needs. The state did not encourage critique in education, particularly critique of knowledge that challenged the power structures of the apartheid régime, which sought to subjugate and dominate groups it categorised and controlled based on race. The critique was not absent among the populous; anti-apartheid resistance movements engaged in substantial critique (Scholtz, 2019). However, such critique – whether religious, political, economic, or ideological –was unwelcome and often punishable.

The current, overt requirement to engage in CT in post-1994 HE is in sharp contrast to its unwelcome status during the pre-1994 era. The perspectives of lecturers whose education spanned the pre- and post-1994 eras offer valuable insights into the effects of apartheid and its aftermath on critical thinking. This historical overview is a gap in present studies.

2.2.3 Knowledge, knowing, and critical thinking in the past ten decades in South Africa

As the apartheid plan unfolded in political and economic spheres, it also impacted education. In the 1980s, a new form of education dominated by Christian views was propagated and reinforced in the already-established Christian National Education (CNE). Fundamental pedagogies rooted in Calvinism were augmented with quasi-scientific justifications for the separate development of races (Thompson, 2001) and a nod to the scientific rationalism that had trickled into the politically, economically, and socially isolated South African nation-state (Scholtz, 2019).

In her PhD thesis on critical thinking in the sciences among P-STs, Scholtz (2019) highlights comments from Tabata (1980), who offers a portrayal of CNE. Tabata (1980) presents an interesting view that contrasts with the points made about the influence of the WUT. Tabata (1980) avers that the forebears of present-day Afrikaners, isolated from the influence of humanism, were shut off from the strong current of rational thought on humanity, nature, and society that spread through Western Europe in the 18th century. According to Tabata, this isolation stemmed from their early establishment of SA colonies for their European homelands.

jurisdictions to become sources of current, reliable knowledge. They are responsible for managing risk and maintaining their position by propagating more of the same at an increasing pace for the profit that drives their existence (accountability).

Tabata meant they missed the age of criticism, enquiry, scepticism, and the Enlightenment period in general. This statement does not align entirely with my perspective because although periods of challenging knowledge in critical ways were scarce on SA shores, the architects and influencers of colonialism, first under segregation and later under apartheid, were educated in universities of the British Empire, Europe, and later SA universities[10]. Despite rationalist discourses on thinking, they understood what they were creating and pursued their goals with intention and skill

The WUT philosophical views were upheld in that new form of education. The first point I make is that it may be argued that knowledge in SA education, particularly HE, has continued to be shaped by teachings from earlier decades (Enslin & Horsthemke, 2015). The theoretical field, emanating from a range of philosophers, cognitive psychologists, and educationists who devised countless theories about where and how knowledge is formed and learned largely in the WUT, remains prominent. Definitions of knowledge and the knower that were previously and are currently prominent in SA P-STE and HE over the past ten decades have been selected for discussion in this section.

Among others whose theories have provided foundational concepts in countless textbooks for P-STE are Socrates, Plato, Aristotle, Kant, Hegel, Dewey, Piaget, Freud, Bruner, Maslow, Vygotsky, Bloom, Bronfenbrenner, Gardner, Montessori, Kolb, Schön, Ausubel, Audi, and Skinner. The works of these theorists form the core of the library literature holdings in schools of education across South Africa although there is considerable interest among scholars across Southern Africa to critique the literature and, more importantly, to produce new literature that is Afrocentric. The literature has grown in fields of social sciences and medicine also. While this discussion focuses on the foundations of knowledge, a second point must be addressed. The definitions and explanations discussed here might draw criticism for being narrowly considered or outdated. Both observations are anticipated, and I offer one qualification. The

[10] Examples of education among prominent architects, leaders, and administrators over the decades of colonial expansion and beyond include: Lord Milner – Oxford; Lord Chelmsford – Royal Military Academy (Woolwich); Sir Harry Smith – private education – Cambridgeshire; General Jan Christiaan Smuts – Christ's College (Cambridge); Dr Hendrik Verwoerd (Leipzig School); Dr Leander Starr Jameson – University Hospital College (London); Dr Daniel Francois Malan – University of Utrecht; Dr Piet Koornhof – Oxford; Dr Jacobus Johannes Fouché – Stellenbosch; Dr Nicolaas Johannes Diederichs – University of Leiden; Johannes Gerhardus Strijdom – Stellenbosch and University of Pretoria; Balthazar Johannes Vorster – Stellenbosch.

reference to "outdated" theorists concerns the same theorists whose names appear in the current SA HE and P-STE curriculum and policy documents that mandate CT.

Altbach (2010) asserts that Western literature is the foundation of CT. Amin (2016) and Pinar (2016) remark on the "outdated" theory referenced in SA national education documentation. These comments specifically address curriculum, but the critical thinking mandated for P-STE is rooted in the WUT and draws on the same foundational principles of knowledge, as is explained in the forthcoming sections.

In the late 1980s, the weakening of the apartheid régime was evident. In 1994, the first democratic national elections broke the binding spell the National Party had cast on SA. The election of the African National Congress mobilised a new era, a new constitution, and new laws and policies. Pertinent to this study were the education laws and provisions. It might have been expected that contemplating new theoretical underpinnings that re-evaluate the relationship between knowledge and the knower would be a welcome change, reflecting the new perspectives desired in SA P-STE and HE within the SA education transformation agenda, as envisaged in the Education White Paper Three (Department of Education, 1996). However, these have remained unaltered since most national education curriculum documents for SA P-STE and HE were last published within a decade spanning the turn of the 21st century.

The reference to outdated theorists may seem problematic and a weakness in a literature review. However, the persistence of these "outdated theories" likely continues to shape the foundation of the curriculum and how knowledge in P-STE is viewed and critiqued – a significant point that must not go unnoticed. The relevance of the points made in this section lies in their recognition that the knowledge foundations do not align with the circumstances of a new democracy. The WUT holds individualism as central to education, while the curriculum and policy of post-1994, SA education are premised on the foundational principles of the WUT. That is not to say that no changes have occurred. How individualism mediates lecturers' conceptions and enactments is brought to the fore in this new study.

2.2.4 Critical thinking in massified South African Higher Education

In the past 30 years, the HE arena has experienced an epoch of massification in SA (Pillay, 2020; Pityana, 2009; Teferra, 2017) and abroad. During this time, the lecturer determined how to teach and critique knowledge (SAQA, 2000). This contrasts with the pre-1994 curriculum, in which knowledge was passed to teachers and lecturers from a central point. The

massification of HE in SA arises from the transformation agenda nested within the Education White Paper 3 (1996), which foregrounds access, equity, and quality across education phases – previously absent for most people in SA.

Within the massification movement, the relationship between the knower, knowledge, and its critique has been challenged by new realities introduced earlier. One of these is the highly contested space that knowledge occupies in SA HE, as discussed below.

2.2.5 New-old challenges in South African Higher Education: a place for critical thinking

In reference to contested knowledge and the CT exercised on it, the SAQA (2000) documents unrelentingly hold the practitioner (lecturer) accountable for implementing CT. It is worth considering whether CT in its current form needs to change or whether lecturers need to understand and practice CT in ways they have not needed to in the past. With the latter as a set of guiding questions, I discuss various perspectives of how knowledge is contested to frame what CT should be directed at in the present P-STE setting.

Aikenhead (1997, p. 5; 1996, p. 9, 10; 2001, p. 11, 12), a US researcher in first nation curriculum, asserts:

> "In recent years, the 'Western (or Global North) tradition' has increasingly come under attack in anti-colonialist and postmodernist discourses. Thus, the targeted tradition has, on different occasions, been labelled mechanistic, materialistic, reductionistic, empirical, rational, decontextualised, mathematically idealised… ideological, masculine, elitist, competitive, exploitive and violent."

In this decade, post-independence states in Africa aim to foster thinking and action that enable coping with the future envisaged for the continent while honouring indigenous traditions. The narrative of redress in higher education and SA P-STE has evolved to embrace the transformation of HE as a means of achieving goals for historically excluded first peoples and the subsequent settlement of populations within the political boundaries of sub-Saharan Africa. In SA HE, the past decade has seen calls for decoloniality gain traction (Higgs & Letseka, 2022; Odora-Hoppers, 2012, 2022; Maistry & Le Grange, 2023).

Teferra (2008, p. 552), whose research focuses on the African HE curriculum, comments:

> "Curricula and assessment systems were modelled on higher education systems in the former colonial countries. The imitative use of instructional programmes, languages of instruction and reference literature was seen by some as continuing 'colonial tutelage' within African higher education."

Knowledge in SA has been a double-edged sword, honed sharp by long-standing European colonial hegemony on one edge (strongly embraced at the dawn of democracy) and on the other by an intensifying awakening to the enduring sociological and economic deficits of developing nations (referred to in this study as the Global South) (Christy, 2004; UNESCO, 2018, p. 2), increasingly so over the past two centuries. The same sharp edges of knowledge that inflicted harm on countless millions of colonised people are becoming dull. The guardians of "other" knowledge grind away at its potency through decolonisation and other discourses that have gained traction in HE (Christie, 2020, p. 4).

The grinders are largely from within the HE context (Enslin & Horsthemke, 2015; Le Grange, 2004; Scholtz, 2019; Teferra, 2008) and among the students they engage in teaching and learning, such as P-STE programmes. Their actions have created new paths, some aligning with the patterns of change experienced elsewhere in the colonised world (Knaus, Mino & Seroto, 2022). Amin (2016) holds that millennial students in SA challenge the pre-determined norms that currently exist. Student challenges continue and have spread into the teaching and learning space (Knaus, Mino & Seroto, 2022), whereas they previously arose primarily among students in response to slow progress in the transformation agenda set for HE (Van Schalkwyk et al., 2022; Vorster & Quinn, 2017).

Students challenge constructions of society and the individual, the subject matter of education, and even what constitutes an educated person. Delanty (2001) asserts that the university's position as a thought leader is resilient and capable of evolving to meet new needs, as it has for more than a millennium. It should be fertile ground for contemplating knowledge validity and its relevance in the curriculum. A concern raised is that colonial influences on universities have not been questioned adequately, and curricula (Mahabeer, 2020) and pedagogy have undergone limited change (Leibowitz & Bozalek, 2015; Scholtz, 2019). Amin (2016) reports that students now challenge the epistemological roots of the knowledge with which they engage. The contestation of knowledge originates in the damaging ideological structures (racial,

psychological, emotional, social, economic, and cultural) of the pre-1994 education system (Odoro-Hoppers, 2022, p. 19).

These considerations require lecturers to maintain constant awareness when selecting module designs, materials, and activities (online or otherwise) and handling and assessing knowledge (Vorster & Quinn, 2017). Ensuring that curriculum knowledge is inclusive of multiple ways of knowing (Msila & Gumbo, 2016), where values and ethics – including indigenous knowledge – are integrated, is the lecturer's responsibility (Aikenhead & Ogawa, 2007; America & Le Grange, 2019, p. 119; Kraus, Mino & Seroto, 2022; Pityana, 2009). The key note is that lecturers must consciously and critically think about their perspectives on knowledge, the multiple combinations of perspectives, and the factors influencing knowledge ownership, agency, and validity within the university (Odoro-Hoppers, 2022, p. 27).

The times call for CT, especially in response to recent developments in the SA HE arena. Notably, the lecturer is expected to implement CT in pedagogy. However, in this instance, lecturer CT must be activated first to open up space for student CT. The question that arises, then, is how this occurs. This study addresses the gap of what is often declared and professed in formal official circles, but is not analysed sufficiently in operational terms.

Hegemonic forces associated with the WUT (as discussed above) are not diminished by the lack of attention they receive in this writing. Instead, the space in this thesis is limited, while numerous issues face SA HE. Although the current decolonisation debate on knowledge indicates that current knowledge is detrimental to the fabric of African identity, Western knowledge is said to be exclusionary, perpetuating a lack of consideration and access to different, appropriate, and valid knowledge. Criticism of the marginalising effects that WUT knowledge has on multiple ways of knowing is discussed below.

An example demonstrating one of many ways of knowing is indigenous knowledge systems (IKS)[11], which have been ignored and invalidated (Knaus, Mino & Seroto, 2022; Le Grange,

[11] In South Africa, as of the mid-2000s, indigenous knowledge traditions were formally funded and researched under the authority of the Department of Arts, Culture, Science and Technology, which sought to define indigenous knowledge. Indigenous knowledge systems (IKS) include indigenous technology, traditional medicine and health, indigenous food systems, socio-cultural systems and arts, crafts and materials (Mazonde & Pradip, 2005:4), which are all to be understood in the context of the relationships between spiritual and material aspects of indigenous life (Ibid.; Mbiti, 1990).

2001; Odoro-Hoppers, 2022) over centuries of colonial dominance – considered a casualty of colonisation. The contentions surrounding Western hegemony arise from considerations related to the power associated with knowledge. Shedding hegemonic knowledge, encapsulated in curricula for education, that is arrogant, hegemonic, and exclusive (Makgoba & Seepe, 2004) is considered akin to shedding the power that it has held over generations of South Africans under colonial influence and in its more recent enduring forms (Amin, 2016; Jansen, 2023; Knaus, Mino & Seroto, 2022).

Even currently, equity, access, and quality – referred to as "the exclusionary triangle of higher education" (Pityana, 2009, p.2) – continue to be measured against cultural norms and educational policies and practices that fall outside the lived experience of the majority of those who seek education." (Ibid.). The continuing dominance of a colonial-style education is considered highly problematic, particularly concerning the racial and ethnic representation[12] of staff and students in HE state and independent institutions. Moves towards decolonisation in the ongoing postcolonial period in SA HE are characterised by inadequate university funding (Knaus, Mino & Seroto, 2022), overcrowding of lecture venues (Pillay, 2020), and efforts to re-ignite indigenous African education, underpinned by African IKS (Seroto & Higgs, 2024).

Mignolo (2006) indicates that the decolonisation debate is judged from the boundary demarcated by colonialism. The judgement is that the otherness exists inside or outside a demarcated "colonial" boundary. Mignolo (2006) questions the right of colonialism to set the boundary at all, as it belittles the Indigenous before granting fair consideration to its existence in its own right. Colonialism wields the stick; that is the problem with decolonisation. Maldonado-Torres (2007) posits that colonised people and those trapped in the colonial discourse are sometimes blind to that entrenchment. Mahabeer (2020) shares the sentiment thirteen years later.

I posit that the critical thinking mandated to accompany knowledge in its various forms might suffer from the terrarium effect – hermetically sealed within the microclimatic conditions are the components (curriculum knowledge) and how it is critiqued. What, then, of the lecturers

[12] In 2016-2017, black African students constituted 71% of the HE student population while black researchers formed 40% of the faculty (Macha & Kadakia, 2017); a completely different scenario to the apartheid higher education context of almost three decades ago when black student access was severely restricted (Le Grange, 2014).

who attempt to teach and learn in this climate? An argument by Horsthemke and Enslin (2009) supports this view, noting that although the HE environment has "structural whiteness" (Knaus, Mino & Seroto, 2022, p.2), which sustains colonial dominance in education, people engaged in public and intellectual life, regardless of their paradigms or traditions, would at a minimum value discourse, reasoning, rational argument, and a commitment to truth, impartiality, and respect for evidence. Therein lies the rub.

HE conditions before 1994 discouraged CT, and in the post-1994 era, practitioners who experienced those conditions may remain trapped within that sealed terrarium. Is there a terrarium? Who is inside it? I would like to know. What exists within it? The discussion points above suggest that many elements potentially exist. This is precisely the point of this study: examining how lecturers from diverse ethnic, cultural, and linguistic backgrounds engage with CT. Such considerations shaped the selection criteria for participants in this study. Various characteristics in each participant might contribute to understanding how CT is constructed and enacted, as it is promoted as a means to achieve transformation.

However, the contentions surrounding SA P-STE knowledge are not singular nor even double. The gravity of the implications of colonisation and decolonisation is exacerbated by additional issues that are not unique to SA, but are essential in framing the knowledge context in which critical thinking must be applied to achieve effective outcomes. The consequence of contention around knowledge raises the question of whether CT, grounded in the foundational principles of the WUT, is suited to critiquing knowledge that emerges in varied forms among the diverse population within SA's political borders and within the broader evolving circumstances in which CT is to be applied, as outlined above.

What, then, of decolonisation and the startling effects of globalisation readiness demands, the rise of the Fourth Industrial Revolution (4IR), and the sudden and unexpected intensification of artificial intelligence (AI) use? Although I raise these points, it is impossible to address them in depth in this study, yet they inevitably influence how lecturers in P-STE perceive CT.

Meanwhile, definitions of CT are provided, followed by an early analysis of the education curriculum and policy documents in the forthcoming sections. The literature then draws attention to how CT is currently viewed from the cognitive, educational psychology, and philosophical perspectives.

2.3 Establishing critical thinking terminology

A denotative definition of the term "critical" is expressed in analytic and evaluative terms as "exercising or involving judgment or judicious evaluation" ("critical," yourdictionary, n.d.). The ancients would surely approve of a classical definition of "critical" derived from the Greek word *kritikós*, meaning "discerning, capable of judging" (Merriam-Webster Online Dictionary, n.d.). The term "critique" is frequently presented as an alternative to "critical". A denotative definition of "critique" refers to "an act of criticizing" or "a careful judgment in which someone gives an opinion about something" (Merriam-Webster Online Dictionary. n.d.), not unlike "critical", as previously defined. These definitions serve as a foundational explanation of the terms. However, further exploration of philosophical and educational psychology perspectives in the literature will provide a broader range of terms and understandings.

Knowledge is a prerequisite for CT and is complemented by it. The link between knowledge and CT is implied in national and institutional documents that mandate CT (CHE, 2011; SAQA, 2000). Knowledge is enriched by the presence of CT, and once CT has been employed, it complements and expands knowledge. McPeck (1981, p. 98) asserts that knowledge is "the mainstay of academic scholarship." Such views sustain the tradition of discussing knowledge and CT synonymously in Western literature. In this study, knowledge and CT will inevitably appear together throughout the text. This reciprocal relationship is particularly significant because critical thinking has been established as a central endeavour in HE. The section below attempts to expand upon perspectives on CT (see 2.4.2).

2.4 Perspectives of critical chinking

Plenty of literature on CT in education has been published from philosophical and cognitive psychological perspectives. Throughout the 20th and 21st centuries, theorists' constructions of CT have retained roots in philosophy, the concepts devised in the scientific era, and cognitive psychology in education (Lewis & Smith, 1993). Sternberg (1986) provides a reason for focusing on psychology as a foundation for CT, asserting that education has benefited significantly from this field. At times, the theory is generated within specific approaches to study. At other times, it emerges across paradigms and disciplines, illustrating that CT in the WUT is not specifically categorised. Consequently, attempts to provide unequivocal statements about the clarity of CT pose an enlightening challenge.

2.4.1 Critical thinking in education

Barnett (1997) suggests that CT is most likely an amalgamation of numerous ideas, contingent on whom you ask – largely influenced by discipline and pedagogical approaches to teaching and learning. With the foregoing discussion in mind, it is not unreasonable to consider that the CT will be constructed and enacted in varied ways by lecturers participating in this study. As the discussion progresses, all possibilities for the teaching and learning of CT in P-STE should be considered to form a backdrop and juxtapose with the views offered by these lecturers. Within the delineated timeframe and scope of this study, CT theory is examined from only two perspectives – philosophy and educational psychology.

2.4.2 Critical thinking – philosophy, educational psychology

McPeck's (1981) theory of CT implies it comprises a wide range of cognitive models, drawing on the foundations laid down by Plato, Ryle, and Bruner (corresponding respectively to systematic inquiry, the mind and body connection and action, and constructivism and reflexivity). McPeck (1981) proffers a well-formulated, primarily broad, multi-dimensional theory of CT for education, addressing teachers, lecturers, and students of education from the perspective of a cognitive psychologist in the field. Barnett (1997) comments that McPeck's (1981) pedagogical and ontological offerings do not fully respond to HE's specific needs. However, McPeck's work, like that of Dewey in the early 20th century and Ennis towards the end of the same century, provides in-depth philosophical and cognitive psychology insights into education, albeit from a North American context.

CT rests on suspending thought and engaging with the experience (McPeck, 1981). In an ongoing scholarly exchange with Ennis (1987) about the practical applicability of this claim, McPeck (1981) agreed that CT involves the correct assessment of statements but added that it can also apply to an activity. Ennis (1962, p. 59) initially proffered that CT consists of "the correct assessing of statements." Later, he revised this definition to "reasonable reflective thinking that is focused on deciding what to believe or do" (Ennis, 1987, p. 10), where the word "do", reflects the Kantian view that thinking must be cognitive but also have an element of usefulness.

In the tradition of Deweyan pragmatism, McPeck (1981) holds that knowledge exists in diverse fields and disciplines within the borders of the WUT and, significantly, beyond formal institutions (in all areas of life and learning). Therefore, "… it follows that there will be many different epistemologies corresponding to different fields of human endeavour" (McPeck,

1981, p. 155). The various types of CT identified by McPeck (1981) include aesthetic, creative, generative, divergent, lateral, and vertical CT. McPeck avers that degrees of CT can be applied to knowledge with the depth of CT depending on the thinker's depth of knowledge and experience. This statement implies that CT is more than just thinking; it is also doing. The meaning of "degrees" of CT is unclear – whether it refers to intensity and depth of thinking or the frequency of CT remains open to interpretation.

The theorists most frequently referenced in South African curriculum and policy documents are Dewey (1910; 1938) and Bloom and Krathwohl (1956). The entire SA education system is premised upon those pragmatic and behaviourist foundations. Unsurprisingly, these foundations stem from philosophy in the WUT and the field of cognitive psychology in education, reinforcing my earlier claim that the foundational principles of CT originate in the WUT. The suitability of the theories included in the P-STE curriculum and policy documents dealing with CT was presumably rigorously debated before their inclusion, as suggested by Du Preez (2017), or at least reviewed in subsequent years. In this chapter, references to Dewey (1938) and Bloom & Krathwohl (1956) would likely be unnecessary if their theories were not central to policy and curriculum for P-STE. Since Bloom's taxonomy (1956) is named in curriculum documents, I find it pertinent to note that Bloom's taxonomy remains an enduring informant of CT in the institution in which I work and appears frequently in literature that deals exclusively with aspects of CT. It is, therefore, worthy of mention.

2.4.3 Bloom's taxonomy of educational objectives – cognitive and affective

Discussing Bloom's taxonomy of cognitive educational objectives (Bloom & Krathwohl, 1956) and pursuing commentary on it arises for the reasons expressed hereunder.

i. Outcomes-based curriculum design in SA is expressed in terms of the outcomes found in Bloom and Krathwohl's (1956) taxonomy (cognitive and affective domains) (Carmichael & Stacey, 2006, p. 3).
ii. CT is often believed to reside in the upper levels of Bloom's taxonomy, particularly the two highest levels (Ennis, 1993).
iii. Frequent comments from lecturers refer to Bloom's taxonomy as critical thinking.

Bloom's taxonomy of educational objectives (BT) (Bloom & Krathwohl, 1956) and Anderson, Krathwohl and Bloom's (2001) revised taxonomy (RT) in the HE environment appear to be referred to as CT (Anderson & Krathwohl, 2001). Authors of academic articles related to CT,

for example, Bouanani (2013), Fahim & Masouleh (2012), King (1995), Lai (2011), Mpofu & Maphalala (2017), Olatunji (2017), and Shim & Walczak (2012), refer to Bloom's taxonomy and higher-order thinking similarly to the way I have heard it referred to casually by colleagues – as synonymous with CT. The connections drawn between knowledge, CT, and BT highlight that, in informal conversations, colleagues refer to Bloom's taxonomy as higher-order and critical thinking. Within the institution where this research was conducted, Bloom and Krathwohl's (1956) taxonomy or Anderson, Krathwohl and Blooms' (2001) revised taxonomy of educational objectives is often cited in module planning and assessment.

Bloom and Krathwohl (1956) note that the original handbook on educational objectives is "one of the most widely cited yet least read books in American education" (Anderson & Sosniak, as cited in Anderson, Krathwohl & Bloom, 2001, p. xxiii). The taxonomy[13]was written by educational and learning behaviour psychologists.[14] Its primary objectives were to identify and "classify student behaviours which would represent the intended outcomes of the educational process" (Bloom & Krathwohl, 1956, p. 12). None of these behaviours was specifically named critical thinking.

It is beyond the scope of this chapter to discuss the considerable amount of literature generated in relation to the widely used BT and the RT of Anderson, Krathwohl and Bloom (2001), but further points made here might help establish why BT and RT are referred to so frequently. The recent publication of Anderson and Krathwohl's (2001) RT altered little of the earlier theory on knowledge categories. It was deemed to comprise vocabulary, facts (small bits of factual knowledge), generalisations, and principles, subdivided into more specific categories such as concepts, principles, models, and theories. These closely match the forms of knowledge and outcomes encountered in the policy and curriculum documents for P-STE.

Mentioning this is significant for two reasons. Firstly, across the taxonomies, the cognitive, affective, and psychomotor domains are rooted in cognitive psychology that relates to knowledge rather than CT per se. Secondly, an education system in SA that expresses outcomes

[13] A taxonomy demands consistency and interrelationships between categories, allowing for the interrogation and integration of theory and its components and the opportunity to identify deficits in the theory the researcher seeks to resolve.

[14] Anderson, Krathwohl and Bloom (2001:14) advise that behavioural science should not be confused with behaviourism (all behaviours are learned through interaction with the environment, especially by positive reinforcement).

in BT terms suggests a possible explanation for why Bloom's work tends to be closely associated with CT among lecturers of P-STs.

Kompa (2017) criticises the 1956 and 2001 versions of the BT and RT, respectively, for ignoring the social interaction required to achieve higher-order levels of thinking. He adds that BT and RT are outdated and inadequate for fostering the type of thinking required of students today. That BT guides outcome establishment and that RT is a convenient, albeit not entirely suitable, heuristic[15] to guide some aspects of higher-order thinking is evident, but is it CT?

Pursuing BT and RT as forms of CT has implications for the transformation agenda sought in HE, as it may provide a seemingly adequate platform for CT that does not warrant a challenge. Lecturers who use BT terminology as synonymous with CT may not have read or engaged deeply with BT or RT. Bloom and Krathwohl (1956) identified this issue among educators using BT. Perhaps lecturers have been swayed by CT constructions shared among colleagues, and depending on the institutional setting in which they work, they may have dabbled or committed to CT enactment in the programmes they teach.

They may have subconsciously or consciously questioned its form. It will be interesting to know how much emphasis the lecturers participating in this study place on the taxonomies. The depth and significance of referring to and relying on BT remain unclear. Although it was not a specific focus in the post-observation interviews in this study, it was noted when the topic arose.

In the ensuing sections, I continue exploring views of CT that characterise the literature in search of clarity regarding its form, meaning, purpose, and enactment.

2.4.4 Critical thinking as a process of creating invisible products

In light of past tendencies in education to respond to approaches arising from technicism (producing students with knowledge for a predetermined political and economic agenda), it is pertinent to explore how CT could be a process of creating concrete and abstract products. The production of products invariably involves a process. Wallin (2010) attributes the notion of process in CT to a focus in education on largely technicist perspectives that emerged during

[15] Heuristic (referring to a method of teaching) allows students to learn through discovery and personal experience rather than through direct instruction (Cambridge Dictionary).

the development of a technicist era in industry and business, as promoted and envisaged in vocational-based curriculum views of Taylor (1911) and instrumentalist thinking proposed by Tyler (1949). Technicism, stemming from growing industrialisation in the US, was extrapolated into education literature with the help of cognitive psychologists who focused on behaviourism. Philosophers and educational psychologists, debate whether-or-not, CT is a process (Ennis, 1993; Paul, 1984). McPeck (1981) recognises process as the suspension of thought applied when first encountering knowledge, with CT then exercised upon it – aligning with the behaviourist perspectives prevailing at the time of his writing. The views of Swartz (as cited in Baron & Sternberg, 1987) and Giancarlo and Facione (2001) are examples of the cognitivist behaviourist perspectives that favour CT as a process.

Although behaviourism and its emphasis on process emerged in the 1950s, it continued evolving into the 1980s and remains evident in SA education curricula (Pinar, 2010; Le Grange, 2014). Remnants of that era persist into the 21st century, with its influence apparent in the SA P-STE curriculum, which is explicitly described as outcomes-based. A puzzling aspect is that a technicist foundation for education is expected to be a suitable response to the demands of a young and emerging nation (SA) within a broader global context.

Despite the ongoing presence of behaviourist theorists referenced in SA curriculum and policy documents, an emphasis on process, the production of goods and services, and efficacy in execution (measurement) has come to be viewed as a poor fit with teaching and learning in HE. Students increasingly demand to be treated with "humanist" (Rogers, 1969) kindness that foregrounds "other person-centredness" (Bélanger, 2011) and values "otherness" (Spivak et al., 2022, p. 138), while academic knowledge expectations require more than the processing of facts. The irony of a technicist approach is that it purports to enhance efficiency in the workplace, making work and thinking measurable and, therefore, beneficial to the worker. However, technicism has little interest in individual development, with Pinar (2011) arguing that it serves the government of the day. Given the prominence of behaviourist theory, its influence remains significant.

Historically, politically, and programmatically, under the guise of serving and preparing individuals in education efficiently, South African teachers were trained to lead learning, reinforce or modify desired behaviours, and build complexity using formal, step-by-step processes (Samuel, 2008). Learner error was viewed as indicative of shortcomings rather than as an opportunity to explore alternative problem-solving approaches. Behaviourists advocated

a pedagogical approach that guided students towards learning objectives and predicted behavioural outcomes (Leonard, 2002, p. 16). The attention paid to Bloom and Krathwohl's (1956) taxonomy in the national curriculum and policy documents exemplifies a behaviourist design with far-reaching and current influence.

Many lecturers in this era of P-STE, irrespective of ethnic group or language, attended school and were steeped in these traditions. As previously discussed (see 2.2.2), limited space existed for CT under the circumstances described by Suransky-Dekker (1998) as a fundamentalist education fostering separate oneness for individual groups in SA based on race. "… teachers were trained to become loyal and obedient employees of the State, who would follow instructions and regulations of the departments that employed them" (Hartshorne, 1992, as cited in Suransky-Dekker, 1998, p. 6). The status quo was not to be challenged openly or formally. The individuals produced by this system are the people my colleagues and I have become, and we are the parents and grandparents of the P-STs we lecture. The study focused on how those individuals might be served and interpreted by cognitive psychology and specific iterations thereof. Notably, the same cognitive, educational psychology that once sought to suppress CT (through selected behaviourist theory applications) is now used to advocate for liberation through CT at numerous levels in current curriculum and policy directives. Throughout the decades, the psychological perspectives of earlier theorists who strongly promote processes – and, more recently, outcomes – have continued to theorise the matter of process. Technicist elements are exemplified in the US-based work of Facione and Facione (2007), who initially defined CT as a list of logical operations. They later revised their view, saying that CT, as a process, also requires a reflexive element, meaning it employs non-linear processes and procedures requiring a degree of reflexive thinking about what had been discovered in the process of learning, rather than merely following a list of logical operations. The discussion now turns to forms of CT within disciplines.

2.4.5 Critical thinking in the disciplines

Critical thinking as a process cannot be maligned, as it may be useful in some disciplines where the outcome produced by the process serves as significant evidence of understanding and skill. This might occur in applied mathematics or information technology, such as map work, where mathematical principles are used to develop a hard copy or digital cartographic product. Similarly, it may be relevant in music theory or in writing computer code, where process not only plays a role but also directs outcomes, as seen in the generation of images, numbers, and

text in AI applications. However, it is unlikely that the process-and-product notion of CT is universally suited across education and disciplines at a systemic level.

In a study of lecturer critical thinking in the UK, Moore (2013) reported that, in the context of their disciplines, specifically in the humanities, lecturers construed CT as described hereunder.

> The rendering of verdicts, taking a stand, detecting "good" and "bad" arguments, seeking validity and truthfulness of sources, examining premises, evaluating salient points, detecting structural soundness, engaging in truth-seeking, judging acceptability, determining usefulness and persuasiveness, practising scepticism, arguing points without blind acceptance, finding adequate reason, rejecting theories as dogma, adopting a critical view of one's own beliefs and assumptions, critiquing common sense understandings, challenging taken-for-granted concepts, reaching conclusions, and contributing new ideas to existing knowledge.

The slew of abovementioned characteristics of CT is confined to the humanities discipline in which this research was conducted. Similarly, Bellaera et al. (2021) surveyed a significantly large sample of lecturers of various disciplines and institutions in US universities to establish how CT was taught. In contrast to Moore's open-ended approach to questionnaires, Bellaera et al. (2021) provided participants with lists of definitions of CT. Participants ranked ten definitions of skills based on an extensive list devised by Facione (1990), while other skills not included in the study were considered "cognate skills that overlap with critical thinking" (Livingston, as cited in Bellaera, 2021, p. 5). This was done to establish their importance in teaching and learning their subjects.

Humanities and social sciences lecturers prioritised analysis, evaluation, and interpretation. Examining ideas and information, identifying arguments, and reasoning were ranked highly by lecturers of psychology, sociology, and political science. The evaluation was ranked the most important among history lecturers. While the list provided by Bellaera et al. (2021) is acknowledged as limited, the author claimed that the indications were valuable given the lack of similar studies. Empirical literature reports some contrasts in opinions on lecturer CT in other disciplines, although these contrasts may not be as stark as one might anticipate. Such considerations deepen the urgency of exploring how CT is constructed in the SA context to determine if it aligns with or diverges from the CT reported in the literature.

2.4.6 Critical thinking skills

A focus on critical thinking as a set of skills is strongly associated with technicism, and several theorists have attempted to identify CT in terms of what individuals need in order to think critically. Brookfield (1987), Bacon & Thayer-Bacon (1993), and Facione (1990) suggest that

critical thinking requires the cultivation of skills. Facione (1990), working from a psychological perspective, investigated the cognitive domain of CT. He engendered the authority of forty-six philosophy experts in the US in a research project, which led him to author *The Delphi Report* (1990). This report established a set of cognitive skills for CT.

The Delphi Report is significant in CT because its adoption resulted from extensive deliberation and wide consultation. It currently serves as the foundation for some of the largest CT assessment systems developed in education in the US. The report concluded with a description of a set of cognitive skills, as listed hereunder. An expanded version of these skills, along with sub-skills and examples, can be found in Facione (1990, p. 15-22), although they are too extensive to be included in this report. They describe the cognitive skill dimension of critical thinking as follows:

- interpretation – categorisation, decoding significance, clarifying the meaning
- analysis – examining ideas, identifying arguments, analysing arguments
- evaluation – assessing claims, assessing arguments
- inference – querying evidence, conjecturing alternatives, drawing conclusions
- explanation – stating results, justifying procedures, presenting arguments
- self-regulation – self-examination, self-correction (Facione, 1990, p. 15)

The skills list shares numerous similarities with elements of CT propounded by Dewey (1910) and Bloom and Krathwohl (1956), to name just two, with behaviourist influences evident in explaining what a critical thinker should be able to do.

Facione (1990, p. 15-16) warns that:

> "Not every useful cognitive process should be thought of as critical thinking. Not every valuable thinking skill is a critical thinking skill. Critical thinking is one among a family of closely related forms of higher-order thinking, along with, for example, problem-solving, decision making and creative thinking."

Overall, Facione (1990, p. 2) concludes that the definition of critical thinking is:

> "purposeful, self-regulatory judgment which results in interpretation analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based."

New iterations of critical thinking have developed over time. These views build on previous work and intensify the debate about what CT is and how it relates to the individual. At the HE

level, the notion of teaching to produce products and construing CT as a set of skills seems incongruent with the role of HE, which is to produce critical citizens who aspire to knowledge beyond the endeavours of schooling. However, the systemic use of outcomes-based education as a foundation for the education system in SA appears to favour behaviourist theoretical underpinnings. Lecturers may be able to indicate how they have negotiated CT to elevate engagement with knowledge in their disciplines, moving beyond technicist and behaviourist approaches.

2.4.7 Reflection and reflexivity as critical thinking

The status of "reflection" as a frequently referenced term in literature and SA national education curriculum and policy documents must be addressed. The term appears numerous times in the national curriculum and policy documents. Its frequent occurrence alongside the term "critical" warrants discussion regarding its role in fostering criticality or contributing to being critical.

"Critical reflection of learning" (SAQA, 2000, p. 16) is stated as a curriculum goal, while "reflexivity" is widely recognised and expected in work-integrated learning in P-STE programmatic goals (Council on Higher Education, 2011). Both terms appear frequently concerning practice teaching and methodology modules in the P-STE programme. (These modules are essential components of all undergraduate and most teacher education qualification programmes).

The juncture of explicit and tacit knowledge is evident in the work-integrated learning (WIL) component of the national curriculum for HE (CHE, 2013b). This is where references to the importance of reflection emerge, meaning the process of taking a retrospective view of a situation. Reflexive practice, however, has a critical and iterative quality that includes metacognition.[16] In an Irish study on the means to develop interactive approaches to the

[16] Metacognition arises from cognitive psychology theory in education and focuses on individual internal processes (Bandura & Barbaranelli, 1996). Theorists focused on CT describe metacognition as the ability to monitor the control CT (Halonen, 1995). It is also described as the monitoring of thinking and strategy use in relation to understanding what is already known, determining where the thinking is leading, and recognising progress or arrival at a conclusion. The meaning of metacognition pertains to the extent to which a learner is conscious of their processes and knowledge (Halpern, 1999). It is also viewed as a subset of critical thinking, specifically the ability to deploy the correct strategies at the appropriate time (Van Gelder, 2005). Van Gelder's (2005) description closely aligns with Facione's (1990, p. 15) concept of self-regulation. The adult learner relies on the tenets discussed thus far to heighten awareness and think critically, making this metacognitive state a form of critical thinking. The individual's awareness of metacognition is central to CT.

teaching and learning of critical thinking among pre-service teachers, Golden (2023, p. 951) points to the importance of metacognition in raising awareness about thinking and enabling learners to assess the levels of their knowledge and skills.

An example can be found in a P-STE programme, where P-STs are required to hold disciplinary knowledge, lesson planning, classroom organisation skills, and presentation skills in mind to present a lesson. They must then reflect on and critique their practice. The leading figures in reflective practice and reflexivity are Argyris (1984) and Schön (1978). Their work is widely applied in adult learning theory, especially concerning working life.

Reflexivity bears the hallmarks of the metacognitive perspective of thinking, and both are strongly related to CT. The theory implies that students engage in cognitive processes when they encounter external conditions. This approach expects learners to integrate explicit knowledge, memory, and tacit knowledge representation, then retrieve codified short-term memory (STM) and long-term memory (LTM) to create new knowledge or navigate new situations. These concepts were first introduced in Piaget's (1969) cognitive developmental theory.

A strong feature of reflexivity is the return to original and developed thinking to retry and reformulate ideas and actions. The strength of cognitivist reflexive theory rests in its open-ended outcomes, which align closely with CT (McPeck, 1981). In short, reflection and reflexivity should not be discounted as forms of critical thinking and action. They might also be seen as central to the work of a lecturer engaging in their CT. This statement aligns with Moore's (2013) findings, based on interviews with UK-focused lecturers in the humanities, where reflection and reflexivity were commonly reported. At this juncture it is an imperative for understanding, that CT is not only dependent on who one is asking about CT but also where and when CT occurs. It may be an abstract, cognitive endeavour or mental process (verbalised or unspoken); alternatively, it may be prolonged and intermittent cognitive activity. The CT may be manifest in speech from a single person, or from an individual communicating within a group. CT may manifest in a physical process or patterned sequence. Indeed, that realisation marks the significance of the voices of lecturers in this study. These presently unexplored areas constitute the gaps this study aims to fill.

The following section explores the theoretical constructs of CT in education and the influences that shape CT constructions over time and within the national mandate.

2.4.8 Logic, argument, and argument analysis as critical thinking

The term "argument" is frequently encountered in everyday and academic discussions about assessment, literature, and research among lecturers in the research locale of this study (along with the casual use of the terms of the upper levels of BT as synonymous with CT).

McPeck (1984, p. 31) clarifies the term "argument". He indicates a misnomer created by authors who appear to offer CT as the answer to all the problems one encounters. He believes that some authors "sell" CT as improved reasoning ability and argument analysis. However, McPeck (1984) explains that argument analysis is part of reasoning ability; its purpose is to reach the truth. He also distinguishes between types of arguments: everyday arguments about everyday matters and academic argument analysis. He refers to daily thinking as an everyday argument. Johnson and Blair (as cited in McPeck, 1984, p. 32) posit that everyday argument concerns what is "practical", "everyday", "ordinary", and "mundane". McPeck (1984) posits that general reasoning ability used in everyday argument has a place in CT but that everyday argument does not require the same treatment as CT. CT is exercised when a critical element worthy of the effort expended on it occurs. The critical element is exemplified in the discussion of the theoretical concepts of CT that follow. Some theorists hold that critical thinking is based on epistemic beliefs or the "analysis of good reason for various beliefs" rather than logical belief rooted in formal logic (McPeck, 1981, p. 23).

An academic argument is often associated with formal and informal logic. Logic is seldom encountered as a standalone module in P-STE programmes. However, it is worth mentioning because the literature intends to inform practice – on which lecturers in this study may have relied for insight into the CT phenomenon – and sometimes suggests informal logic as a means of teaching and learning argumentation for academic CT. Among others, Braun (2011), Hughes & Lavery (2015), McPeck (1981), and Noddings (2006) advocate for logic. Logic has its roots in the idealism of philosophical thinking, which involves the ideal of the perfect thinker conducting ideal thinking in a contrived context. It is characterised by a focus on applying formal rules of logic (Sternberg, 1986). Logic utilises language and analogous symbols, for example, X, Y, and Z, which are most closely aligned with the language of mathematics.

Formal logic can be divided into inductive and deductive thinking and serves mathematical thinking well. However, mathematics has developed a specific area of logic, as seen in the work of US mathematician and logician Smullyan (1961), who combines puzzles and CT challenges with mathematical logic. Mathematical logic is anticipated in science and

mathematics in P-STE programmes. Hofstadter (1979) promotes CT through interdisciplinary approaches, drawing from logic, mathematics, music, and art, echoing a view proffered by Barnett (1997), who advocates for such interdisciplinary understandings and praxis for CT.

Mathematical logic is found in the study of mathematics and music. Therefore, the researcher must remain alert to whether it differs from the logic recorded in study letters or is identified differently by lecturers of the disciplines represented in this study. Representing types of critical thinking in a balanced manner, without favouring the arts and humanities over sciences and mathematics, or vice versa, is inherently challenging. Furthermore, thinking about CT must allow for it to be any number of combinations of the above – or perhaps something completely different.

CT requires deductive and inductive thinking but does not rely entirely on formal or informal logic; logic is merely a tool to develop thinking and does not claim to bring thinking about a matter to any open or closed conclusion. According to McPeck (1981), several theorists reject formal logic outright as a means of CT. Logic is often accused of being linear, without the benefits of the spirals of revisiting thinking (reflection or reflexive thinking) attributed to CT approaches advocated by Dewey, Bruner, or Argyris.

For instance, Bowell and Kemp (2005) criticise formal logic as being useless in many instances because logic examples deal with artificial situations and only serve to prove one point at a time. When considered in a different context, these examples become fallible and useless in real-life encounters, which are complex. Instead, Bowell and Kemp (2005) promote informal logic in a sizeable portion of their suggestions for teaching CT. Moore (2013) suggests that informal logic serves to strengthen everyday argumentation.

However, CT is not only the correct assessment of statements (McPeck, 1981), nor is it merely the detection of fallacies upon which informal logic tends to focus. CT is not served entirely by formal or informal logic; it is a tool for detecting fallacy, ambiguity, and contradictions (Cottrell, 2011; McPeck, 1981), particularly in argument.

Metacognitive theorists (Polanyi 1964; Schön 1987) who follow the rationalist approach combine logic, evidence, and principled thinking as the basis for CT, while Lewis and Smith (1993) promote philosophical, reflective thinking and logic as a combination for effecting CT. McPeck (1981) recommends that disciplines cross-pollinate their forms of formal and informal

logic to strengthen CT. The permutations of how CT is constructed are demonstrated in a few instances in the discussion above.

Although it is a strength that CT can occur in plentiful combinations, there is a chance that a discussion such as the one above reduces CT to a theoretical academic discussion that does not explain how to implement CT at a practical level. Understanding CT requires exploration of theory, but it also demands that practitioners actively engage in and with its tenets to inform pedagogical decisions. Which of the numerous perspectives were known and applied in this study among lecturers of P-STE?

Various perspectives that have not yet been introduced emanate simultaneously from philosophy and educational psychology, while others are commonly questioned for the status they hold as forms of CT. They are included here to offer insight into what I have often wondered about. These perspectives hardly seem sufficiently sophisticated to contribute to the more classical and elevated conceptions typically associated with the HE task of critical thinking. Perhaps this study will indicate whether CT serves an elitist purpose, formulated in erudite language, or has a more mundane purpose that makes it appear unlike the CT commonly associated with HE.

2.4.9 Does problem-solving count as critical thinking?

What then of problem-solving and argument, which, like BT, I have previously suggested is often unhesitatingly associated with, and even construed to be a form of, CT? (see 2.4.3). Anderson and Krathwohl (2001) and Bloom and Krathwohl (1956) promote knowledge as a prerequisite for problem-solving. Ennis (1987) separates problem-solving and CT but recognises their interdependence in practice. Furthermore, he insists that critical thinking is not simple problem-solving, as it requires more steps than problem-solving.

Lewis and Smith (1993) suggest that despite scientists' and mathematicians' fiercely guarded traditions of using problem-solving in their disciplines, they employ problem-solving to deal with subject matter (a form of CT as encountered in psychological traditions of problem-solving) and apply critical thinking in the philosophical tradition when confronted with ethical issues. The answer to my question, then, is that problem-solving does not count as a lesser form of CT; it is instead an invaluable form of CT that has a place in specific disciplines.

Bloom and Krathwohl (1956, p. 19) refer to problem-solving as part of the intellectual ability and skills used in higher taxonomic endeavours. Thinking and problem-solving are regarded

and rewarded differently in mathematics, where both are tools for achieving a correct answer and as proof of critical engagement, as demonstrated by arriving at the solution. This contrasts with the humanities, where philosophical thinking may be engaged, involving the pursuit of a well-grounded and well-argued solution, no solution, or multiple solutions – the latter being evidence of sound reasoning (McPeck, 1981). Philosophical thinking is, therefore, most frequently associated with the liberal arts and humanities (Pinar, 2011; Wallin, 2010).

More recent literary perspectives on CT challenge understanding. Bailin (2002), whose disciplines are science and mathematics, offers alternative views, demonstrating how discipline-related stereotypes – such as the expectation that mathematics strictly adheres to set processes – can be questioned. Contrary to expectations for a researcher in mathematics or science to prioritise process, Bailin (2002), a mathematician, rejects the view that CT is merely a set of skills or a process, arguing that such a perspective implies knowledge is a product to be processed.

Hinchliffe (2002) describes skills as context-bound and learned in context, not in isolation, and as more than mere technique. The success of CT also depends on correctly interpreting purpose and context, with different skills necessary for different contexts. Giancarlo and Facione (2001, p. 29) emphasise this point, stating that an individual thinking critically must be "able to apply critical thinking skills to each other as well as to the problem at hand."

Bailin (2002) objects to theorisations of CT that portray it as dependent on mechanistic and repetitive models of routine-following (steps) because she claims that:

> "Simply carrying out a set of procedures is not sufficient to ensure critical thinking, since any procedure can be carried out carelessly, superficially, or unreflectively in other words, in an uncritical manner" (Bailin, 2002, p. 363).

Bailin (2002) posits instead the importance of attention to the "premise, conclusion, cause and effect, necessary and sufficient condition, knowledge of methodological principles and knowledge of criteria for critical judgment" (Bailin, 2002, p. 365). Despite the call for a more liberal form of CT, Bailin's suggestions have a rationalist focus, most often associated with the sciences. Assent to the philosophical tradition of logic is also strongly evident.

Mackey (cited in Bailin et al., 2010) prefers teaching procedures of a heuristic nature purported to yield a reasonably considered CT outcome, with the idea of heuristics being equivalent to process. Marzano et al. (as cited in Bailin et al., 2010) soften the heuristic approach by

suggesting that the procedures should accommodate "repertoires or arrays of alternatives" instead of a single route to CT. Bailin et al. (2010) contest that approach as being restrictive, as it appears that the reflective element, so vital in CT, might be ignored – again, a clear rejection of process alone.

Bailin et al. (2010) contend that the idea of procedural steps is inappropriate to the nature of CT and posit that steps should be replaced with norms about thinking. However, norms present the danger of suggesting that they are merely another set of requirements to be fulfilled in much the same way as procedural steps. Bailin et al. (2010) demonstrate the influence of postmodernist thinking on CT. Postmodernism, distrustful of theory, criticises it for being overly critical and hobbling the critical process by suggesting that it is not sufficiently objective. Bailin et al. (2010) reject utilising procedures and classroom activities, often purported to broaden the mind, as unconducive to developing the quality and depth of thinking they believe will enhance an individual's CT.

A more extreme example of the rejection of structure is expressed by Biesta and Stams (2001), who also work within the postmodern paradigm. They reject critical dogmatism as the premise of the CT "operation" (Ibid., 2001, p. 60) or process because, like heuristics, it establishes a framework that makes CT self-fulfilling. They further argue that the very foundation upon which the critique is premised creates a dogma, which results in a dogmatic outcome. Instead, they advocate for transcendental critique (Biesta & Stams, 2001), which suggests a liberated form of metacognition (see 2.4.7).

Papastephanou and Angeli (2007) also propose an alternative, deep consideration for CT, which they term "aporetic". It calls for a critique of the critical elements of CT, which they define as follows:

> "The aporetic urges the thinking subject to wonder not only about problematic situations but also about what is usually 'taken for granted', and to wander in alternative and as yet unexplored cognitive paths. Its commitment to the epistemologically legitimating force of criteriology wards off the danger of relativism, while its self-reflective turn to the criteria we employ to authorize our positions goes directly to the heart of human action, goal-setting as such" (Papastephanou & Angeli, 2007, p. 616).

The power of the latter approach rests in "think[ing] and search[ing] critically precisely where there seems to be 'no problem at all'" (Papastephanou & Angeli, 2007, p. 61). While the suggestion of seeking where no problem appears to exist might appear like a matter for philosophers to contemplate, this approach is valuable in subjects and modules that require

problem-solving to design or create new ideas and processes – for example, Design and Technology and Computer Science. The link between philosophy, focused cognitive activity, and the production of products is evident.

The order in which I have presented perspectives on CT reflects the views and iterations of CT shared among various theorists. Although these iterations and integrated versions of CT seem numerous, they constitute only a few examples of what CT might be. Additionally, the iterations could have been structured to highlight differing forms and combinations of CT, among many others. The vastness of CT and the combinations of perspectives on the phenomenon may explain why CT is not fully explored in curriculum and policy documents.

It is evident from the discussion so far that CT is considered in some depth in formal research and theory on CT. In teaching and learning situations in P-STE, lecturers may be familiar with CT theory and practice perspectives, even if only those confined to their disciplines. Although the literature propounds numerous perspectives and views formed from empirical studies of CT, this does not necessarily mean that such literature is widely consumed by lecturers. Much of this section has focused on the theoretical aspects of CT in philosophy. Do lecturers of P-STEs include philosophy in their academic and professional reading repertoire?

This study aimed to shed light on that matter and, thus, not only the understanding of the influence of such theory but also the application of techniques for CT. It may be contended that distinctions between various CT positions and approaches do not need to be formally taught, explicitly stated, or considered a prerequisite for enacting CT in lectures. Possibly, it is sufficient for a lecturer to be aware of the need for CT and implement it in the manner they perceive it to be constituted. The notions of where CT is applied and how it has been practised follow.

2.5 National curriculum and policy for critical thinking

This section explores the national curriculum documents and accompanying policy publications, which express and determine the curriculum aims and intended outcomes

(Dewey, 1910; Krathwohl & Bloom, 1956). These aims and outcomes are, in turn, translated into the development of P-STE programmes[17].

"Curriculum is a highly contested term which is understood in many different ways …" (Ramrathan, Le Grange & Higgs, 2017, p. 95). In this study, the term "curriculum" is viewed in the context of ontology (the relationship between knowledge and the knower), epistemology (the acceptance and truth of knowledge), and methodology (Ramrathan et al., 2017, pp. 95-96). Curriculum defines the sequence, content, and direction of teaching and learning (Carl, 2017). Its influences are multiple and far-reaching (Pinar, 2011). Curricula are theorised and serve as the overarching design framework for a range of P-STE programmes (Samuel, 2008).

The design of P-STE programmes in SA is carried out by teams of academics across the education field and within relevant disciplines (Samuel, 2008). I have indicated that the suitability of its foundations is contested in the SA HE milieu. Typically, a P-STE programme is constructed to include the knowledge types indicated in Appendix A. Appendix A illustrates the knowledge types against which CT is to be enacted[18].

In this study, the term "enacted against" refers to the belief that CT is a requirement in HE, of which lecturers must be aware and that it must be actively incorporated into teaching and learning. Hence, pedagogical considerations for CT are expected. The ensuing section explores the implementation of policy, as it encompasses knowledge and awareness of CT requirements at a policy level and its pedagogy at the institutional and individual lecturer levels.

2.5.1 The link between curriculum and policy intention and the declared implementation for critical thinking

Curricula and programmes that mandate CT are intercepted and interpreted in infinite ways by lecturers – at the meso level of the "institution" and the individual level. Over the past thirty years, reports from the Global North and South Africa indicate a lack of clarity concerning policy implementation and the understanding and practice of CT. In a US study, Paul, Elder,

[17] The following is a working definition of a programme: the overall structure and content of a programme in SA, for example, a Bachelor of Education in Intermediate Phase Teaching. The programme of study is recorded in terms of the modules per year, the NQF levels of each module, credits per module, knowledge mix, knowledge types, notional study hours, module codes, and overall credits.

[18] Each module was registered at the Department of Higher Education and Training and the Council on Higher Education against one of the knowledge types (KTs) mandated in the MRTEQ (DHET, 2015).

and Bartell (1997) claimed that it is unclear what CT is or how it is understood by lecturers of P-STs. In an Austrian HE research context, Astleitner (2002, p. 54) holds that CT is documented in curricula, recorded, and claimed to be taught in programmes. However, he adds that "it is not supported and taught systematically in daily instruction" (Ibid., p.54).

Sears and Parsons (1991) aver that in a Canadian context, even when CT is taught, it seldom reaches learners in the classroom. Where CT is an outcome of HE, students find it demanding (Flores et al., 2012; Halpern, 1999). A concern is that it is seen to "be achieved through a process of 'osmosis'" (Andrews, 2010, as cited in Clifton, 2012, p. 29). The lack of CT among college graduates in the US is attributed to lecturers' failure (Paul, Elder & Bartell, as cited in Shim & Walczak, 2012, p. 16; Rudd, 2007). Scholtz (2019) holds that the vague directives for teaching CT to pre-service teacher science students leave much to the lecturer's discretion in conveying it to students.

It is claimed that lecturers do not fully understand how to teach CT effectively and struggle to transfer this knowledge to their students (United States Department of Education, as cited in Lewis & Smith, 1993, p. 137). Rudd (2007, p. 46) adds, "Critical thinking is a skill, and equally so …. Teaching thinking skills is a difficult endeavour", a point echoed by Mpofu and Maphalala (2017). Given the gravitas of CT as part of graduate learning outcomes in global HE (see 1.4.1), Moore (2011) asserts that how CT is understood has implications – at the individual lecturer level – for how it is taught and practised.

Lecturers' insights into CT have been explored in studies in the UK by Moore (2013) and in the US and the UK by Bellaera et al. (2021). The primary finding of their studies is that lecturers from a variety of disciplines adopt learner-centred approaches and can describe how they employ CT in their lectures. This finding is reminiscent of Fox's (1994) claim that lecturers intuitively know what CT is but do not always know how to implement it.

I aimed to distinguish between lecturers' knowing and naming of CT, describing its construction and praxis and determining which factors constrain or enhance their confidence and permission to teach it. South African literature is largely silent on these understandings among lecturers in P-STE. Instead, emphasis has been placed on advocating for CT (or the policies demanding its centrality to education) without due attention to how practitioners are expected to activate these attributes or dispositions amongst HE P-STs.

In South African literature, Jansen (2013) explains that while intention and documentation are in place, practice is lacking. This affects "the knowledge project" (Soudien, 2010, p. 226) and CT, which are intended to work cohesively. More recent research by Mpofu and Maphalala (2017) makes the same claim. Carmichael and Stacey (2006, p. 1) indicate that the neglect of CT as a critical cross-field outcome (CCFO) (see 1.0) could hinder the transformation of education in South Africa and argue that the matter of CT as a CCFO must not be left in a sea of uncertainty. It is no coincidence that the entire revised post-1994 education system is now coherently planned (Ramrathan, Le Grange & Higgs, 2017) and that the achievement of CCFOs, such as CT, is part of that plan. P-STE policy has thus been revised on paper. The consistent reports from researchers about the lack of clarity and the uncertainty surrounding CT and its implementation are topics addressed in this study. The ensuing section analyses how the national curriculum and policy documents refer to CT as a CCFO.

2.5.2 The South African national curriculum and policy mandate – critical cross-field outcome – critical thinking

Various documents that refer to CT in SA HE are analysed in this section. At a national level, the teaching, learning, and development of CT is a specifically mandated CCFO of P-STE (Council on Higher Education (CHE), 2013a; SAQA, 2000). The document contents cover the nomenclature — meaning, context and extent of the mandate – and indicate the level of guidance offered to practitioners in implementing this CCFO named CT.

This section draws on a preliminary analysis of documents. This analysis is explained in the data collection methods of Chapter Four, where its methodological considerations are discussed. However, reporting the findings of the document analysis is necessary at this point because it provides specific insights into who is responsible for CT, how it is expressed, and what it is intended to achieve. A close reading of the documents and the use of "search" and "find" features on .pdf and .docx files was utilised to detect the term "crit" and its derivatives. Reading these documents as a cluster is advocated to provide coherence regarding their intended purpose (CHE, 2013a). CT's purpose is explained in the ensuing paragraphs.

SAQA and the National Qualifications Framework and Curriculum Development (2000) define the standard, unit standard, learning programme/course, curriculum, and outcomes-based education. In this context, the terms "critical" and "critically" are used as adjectives and adverbs in sentences (see Appendix B (i)). To date, I have been unable to find a deliberate definition of "critical" in this document, but there are contextual references indicating how CT

is to be used (see Appendix B (i)). The silence on these terms is unhelpful, as it allows education practitioners to draw their conclusions without providing sufficient information. For example, the references to CT in the document include phrases such as "use science and technology effectively and critically" (SAQA, 2000, p.18-19) and "critically evaluate" (SAQA, 2000, p. 28).

2.5.3 National curriculum and policy mandate — critical cross-field outcome – critical thinking responsibility and application

SAQA (2000) instructs curricula developers and implementers to broaden approaches to teaching and learning to include CT and thus avoid "narrow, behaviourist" (SAQA, 2000, p. 17) engagement in learning institutions. Furthermore, SAQA (2000) asserts:

> "Since the qualifications and standards focus on the learning outcomes, the methodology of how the critical outcomes will be developed within context is in the hands of the practitioners" (SAQA, 2000, p. 20).

However, it;

> "…. Seems to purposefully avoid direct statements of how particular processes must be done or how particular outcomes are achieved" (SAQA, 2000, p. 21).

The directive is clear: CT is the lecturer's responsibility in a task that will contribute to the emancipation and enrichment of South Africans through their education system. Lecturers are the designated emissaries charged with structuring their institutional curriculum documents to address knowledge types as outlined by the DHET (2015) (see Appendix A) and to enact CT accordingly. It is the responsibility of academics to ensure that this is addressed, reports Minnich (1997) from a US perspective.

If critical thinking is to become an outcome of the curriculum objective – an "intentional and reasoned act" or outcome, as described by Anderson and Krathwohl (2001, p. 3) – it should be implemented systemically across a subject, programme, or discipline. Doherty and Patton (1991), as cited in Halonen (1995), add that it must be determined how students will develop concerning their learning experiences with teachers or lecturers. Therefore, two areas of responsibility for CT are involved, but it is unclear how the work will unfold, particularly concerning CT. The individual lecturer, the institution, and the discipline must surely be involved. Therefore, these points are worthy of further consideration.

Regarding the relationship between the national mandate and the individual educator, two comments about P-STE in South Africa are notable in policy documents. It is stated that "The apartheid education system meted out poor quality initial teacher education [pre-service teacher education (my words)] for all teachers irrespective of race, class or gender" (Department of Education, 1995). In contrast, SAQA (2000, p. 26) claims that "HE institutions that have traditionally produced academic excellence, have not equated excellence with producing critically aware citizens". However, the same document repeatedly criticises the quality of education standards and educators' and academics' qualifications, emphasising the need for review and adherence to address the undeniable need for change (SAQA, 2000) in the new era of freedom from oppression.

This indicates that despite a lack of clarity about what is required or how to develop CT, the responsibility for resolution falls on the practitioners whose capabilities, endeavours, and focus are deemed insufficient. A clear indication in policy regarding who is responsible for implementing the CCFO CT may be viewed as "symbolic policy", meaning it is a broad envisioning of change that signals "a break with the past" but is "merely rhetorical with not clear outlining of pragmatic ways to implement said direction." (Samuel, 2017, p. 7). Clarification must be sought regarding what it means to be a critical thinker within the South African education framework.

The CCFO in SAQA (2000, p. 4) stipulate that learning programmes "… should develop attitudes of critical inquiry and powers of analysis" (Spady, cited in SAQA, 2000, p. 11). It also posits that CT is a complex responsibility. "Critical reflection of learning" (SAQA, 2000, p. 16) is identified as a necessity in relation to the values espoused by a democratic society.

SAQA (2000) intends to provide guidelines rather than more detailed directives on what is desirable to elevate South African students to global standards. Consequently, there is reliance on lecturers – many of whom were previously immersed in a context of political and historical prejudice and closed thinking – to fulfil a role for which they may be ill-prepared. (see Appendix B (i)). Given the limited guidance in the documents discussed, lecturers proceed with implementing CT at P-STE levels.

At an institutional level where lecturers work, it is unclear where they will obtain the information that they require to implement CT. Before commencing this study, a concern was that several lecturers who may participate in the study were educated in teacher training

colleges, which were more aligned with training in knowledge and practice and operated under school-like conditions rather than in theory-for-praxis-driven university environments (see 1.2.2). Would that experience influence their practice? Although this type of theory and praxis may occur at the institutional level, other forces may also shape the lecturer's understanding. A thorough examination of additional national documents mandating CT follows below.

Within The Council on Higher Education's Qualifications Sub-Framework (HEQSF) (2013), the Higher Education Quality Council is charged with defining common concepts, terminology, and nomenclature across frameworks. However, the SAQA (2000), CHE (2013), and SAQA (2013) documents do not define "critical" or "critically". Instead, they rely heavily on curriculum developers and implementers to accurately interpret, design, and implement the areas necessary for attaining the desired outcomes.

References to "critical reflection", "critically appraise", and "critical appraisal" appear in CHE (2013, p. 36) in relation to expectations for a Master's degree and a Master's professional degree, respectively. There is also a reference to "a demand for high levels of theoretical engagement" and "intellectual independence" regarding the Bachelor Honours degree. Deliberate references to "critical" and its derivatives are made specifically in postgraduate levels within the NQF Levels 7 to 10 descriptors. However, they are not explicitly stated in the descriptors for NQF Levels 1 to 6 (see Appendix B (ii)).

It seems unusual that the NQF level descriptors do not mention critical thinking explicitly until NQF Level 7. This point is particularly relevant because undergraduate degree modules – the focus of this study – are distributed equally across NQF Levels 5, 6, and 7. What does the absence of these terms convey in a HE context where CT is highly sought after as an outcome? Perhaps lecturers in the study will disregard the CCFO requirement based on the level descriptors at face value, or they may implement CT regardless. The study design must be capable of detecting such subtleties.

SAQA level descriptors for the South African National Qualifications Framework (NQF) (2013) form the outer layer of the generic standards for expected outcomes, one of which is to be "critical" or to "use scientific … critically" or to "think critically". The first mention of the word "critical" or any of its derivatives in the SAQA (2012) level descriptors appears at NQF Level 7; " … demonstrate the ability to … critically reflect …". The remaining references occur at NQF Level 8, with phrases such as "critical reflection", "critically review information

gathering", and "apply in a self-critical manner" (SAQA2, 2012, p. 10). At NQF Level 9, references include "critique of current research and practices" and "display an ability to critically contribute" (SAQA, 2012, p. 11).

As stated, CT is a CCFO of education and should be addressed at all NQF levels, but it is not explicitly listed. These levels refer to the students' and lecturers' engagement in teaching and learning at undergraduate and postgraduate levels. They imply that lecturers should have encountered CT in their undergraduate or postgraduate studies. This was significant in selecting the participants for this study (see 2.5.3) because it required consideration of their potential exposure to CT.

The South African Department of Education's Norms and Standards for Educators (2000) outlines the roles and responsibilities of teachers and, to some extent, lecturers, as lecturers are responsible for teacher education. It provides a framework for the nomenclature of critical and critical cross-field outcomes, broadly stating that they should inform all teaching and learning (DOE, 2000, p. 7). The CCFOs are explicitly integrated into teachers' and lecturers' roles and responsibilities, including the design of learning programmes. The document encourages educators to create an environment conducive to critical and creative thinking (DOE, 2000, p. 15).

Additionally, educators are called upon to "engage critically" in reflecting on and evaluating how current issues are taught and to "critically examine" school management (DOE, 2000, p. 16). The document requires professionals to respond to "criticism" (DOE, 2000, p. 19) while also "critically analysing" and reading a variety of texts, as well as critically evaluating what constitutes undisputed knowledge, necessary skills, and important values (DOE, 2000, p. 22) (see Appendix B (iii)). DHET explanatory notes on the Norms and Standards for Educators (2000) make one reference to being critical –instructing educators to "practice and promote a critical, committed and ethical attitude towards developing a sense of respect and responsibility towards others" (see Appendix B (iii)).

DHET's *Revised Policy on the Minimum Requirements for Teacher Education Qualifications* (MRTEQ) (DHET, 2015), which is currently under reformulation, shows that the root word "crit" and its derivatives appear six times. In two instances, they indicate what the lecturer should develop in students – "critically appraise" (DHET, 2015, p. 46) and "reflect critically" (DHET, 2015, p. 62).

Three distinct directives are found in the aforementioned publication. The first is that critical thinking is explicitly named. The second is the instruction for lecturers to introduce CT to students (and learners in schools). The third is that the purpose of CT is stated multiple times in numerous ways. However, three crucial points are noted: naming CT does not define it, instructions are given on where it is to be applied, but there is an absence of guidance on how it should be taught and learned.

2.5.4 How critical thinking might translate from policy to practice in South African higher education

At an institutional level, lecturers may now have recorded versions of "crit" and its derivatives in their institutional documentation because they have been directed to do so. However, as Yin (2014) suggests can occur with documents, the term can be an empty signifier, unexplored or neglected, resulting in practice devoid of an accompanying shift in the thinking it aims to engender. This could have occurred either when CT was initially mandated for inclusion by national documents or since then.

The exploration of policy documents intended to guide HE – documents of considerable quality and value – reveals that while they are monumental programmatic documents devised at the national level, they appear to provide limited guidance on what CT is or how it should be implemented in teaching and learning. Additionally, there may be a lack of deliberate focus on teaching and learning CT in institutions where current lecturers may have worked. If CT is expected but not made explicit, some teachers (and lecturers, I suggest) may have encountered it in multiple ways, while others may have limited experience with it.

The question remains: where is guidance situated on developing and implementing CT? Are lecturers aware of the national documentation that directs CT in P-STE? How are they appraised of its presence, and how do they interpret and implement the mandate? Do they know where CT should be instituted?

I would suggest that the theorists of the WUT, whose concepts and principles are evoked in curriculum and policy documents for CT, are assumed to be accessible to lecturers by virtue of their learning and qualifications, provided their educational experience is in South Africa. The selection of lecturers for this study, therefore, had to include individuals whose educational experience was exclusively South African. Lecturers' background in CT might be assumed to be informed by the conceptual understanding of knowledge and thinking as provided by various theorists whose ideas have dominated education in South Africa. Given the prominence of CT,

it is perhaps not unreasonable to expect that it is accompanied by suitable development, as discussed below.

2.5.5 Lecturer preparation for critical thinking

The lecturer is brought to the fore in this study regarding the CT exposure they may receive throughout their career trajectory. Lecturers in HE are frequently required to engage in institutional professional development, where they might be exposed to various theories, initiatives and aspects of teaching and learning approaches. However, this may not necessarily include or guarantee the development of CT as a targeted area. A lack of professional development in teaching and learning can hinder CT endeavours, particularly where lecturers have not encountered training in this area (Kegan, 1994; Merriam, 2001a; Savicevic, 1991).

When lecturers enter HE as teaching and learning (T&L) academics, they encounter circumstances that can either advance or impede their CT and that of the students in their charge (Amin, 2016). This statement implies that lecturers are in a precarious position concerning CT T&L in education-STE. Some lecturers, particularly those without professional teaching qualifications, may not have encountered pedagogy, andragogy, or theories, models or practices related to CT in any form. However, in the SA context, CT is expected to contribute significantly to educational transformation.

At some SA universities, postgraduate diplomas, as well as master's and doctoral programmes, are offered in HE (University of KwaZulu-Natal, 2021a). However, at institutions such as the University of KwaZulu-Natal (UKZN) and others, participation in such programmes is typically optional rather than compulsory. These programmes aim to contribute to the professional development of HE practitioners, focusing on T&L and would present an ideal opportunity to address the T&L of CT. Similar programmes are offered to academics at Rhodes University (RU, 2021), Durban University of Technology (DUT, 2021), and Mangosuthu University of Technology (MUT, 2021).

In contrast, all universities in the United Kingdom now require lecturers to complete an HE course or programme, either through established T&L programmes or in-house academic development initiatives (AdvanceHE, 2020). Recently, Alotaibi and Ismail (2024) reported that at King Saud University in Saudi Arabia, explicit engagement with a CT course among education faculty had a positive effect on raising lecturers' CT awareness and skills. The

research involved a control group excluded from the CT course; the latter fared poorly in CT-related endeavours.

I have been unable to establish the existence and extent of T&L specifically related to CT, either in local or overseas programmes, because access to specific course content and details usually requires registration and payment. In some cases, HE institutions fund participation in such programmes, but in other instances, the cost is the responsibility of the HE practitioner seeking career advancement. Thus, in terms of CT development – whether it is a specific area of focus on CT or not – the cost can hinder access.

When asked how CT is included in HE T&L programmes, an academic involved in postgraduate programme development at UKZN stated that CT is infused throughout the Postgraduate Diploma in Higher Education (PGDHE). The PGDHE includes critical reading, discussion, critique of writing, inquiry, and awareness of HE issues globally and nationally. CT is thus infused and modelled rather than made explicit; it is implicit – an infusion model (see 2.6.2). It is not known whether the HE T&L programmes for HE lecturers are generic across all disciplines or whether they assume that CT can be applied universally despite the varied opinions offered by theorists over time. There is no indication that the theoretical foundations of the CT are explored in any of the abovementioned courses – that is a significant question to pursue. I note that in empirical studies on CT in higher education, the researcher, by virtue of academic convention will interrogate the theory and practice of CT in research reports. It may not mean that the CT of lecturers involved in CT research interrogate CT theory, perhaps they attend to pedagogical foci.

Nevertheless, CT appears to be infused into the programme and integrated with other aims of academic induction programmes. Alsaleh (2017) and Alotaibi & Ismail (2024) reported in their respective studies on CT for faculty in Saudi Arabian HE that the infusion model was the most effective way to teach lecturers about and for CT. CT may not be given separate coverage, and as it is time-consuming, time constraints determine the extent of initiation, implementation, consolidation, and training, just as Bothma and Rossouw (2019) report in their SA research context. McPeck (1981) insists that where CT is taught in schools and universities, teachers and lecturers need training on what CT entails and how it can be activated. In a Canadian study, Abrami et al. (2008) report benefits for students whose teachers specialise in CT training. Facione (2000) and Paul (1992) conclude that it is helpful for lecturers to model their thinking for students so they can follow the evidence and logic. However, it might also be said that this

could be construed as lecturer-led, expert instruction on what to think and how to think, which is counterproductive to the purpose of CT.

In contrast to these perspectives, Bellaera et al. (2021) call for a theory-informed understanding of CT to enhance it after an extensive survey conducted among lecturers of philosophy, psychology, sociology, political science, and history in US and UK universities.

The relevance of lecturers' training for CT in HE raises questions about whether, where, and how SA P-STE lecturers may encounter such CT programmes. A question this study might address is the ease of access, personal interest, and personal resources required for the andragogical enrichment of T&L and the extent and forms of encounters with CT. The discussion raises the question of whether holding a series of degrees necessary for lecturing in P-STE education formally or systematically prepares lecturers for CT. Additionally, it considers where CT is to be encountered if not in organised professional development courses.

2.5.6 Alignment of intended policy, declared institutional documents, and individual lecturer practice

Whether lecturers are prepared for CT, on which curriculum and policy documents place significant emphasis, policymakers expect that CT will translate to practice (see 2.5.3) A close exploration of the expression of CT in institutional documents used in the design of modules within the programmes covered in this study should be undertaken. These documents might indicate if and how CT is expressed by lecturers. The analysis of CT expression is necessary because institutional curriculum documents detail the structure and coverage of a specific programme at the institutional level. They serve as a declaration of intent to teach prescribed knowledge and, presumably, CT.

A specific study letter (SL) for a module may indicate if, where, and how the root word "critic" and its derivatives are used by lecturers. In the realm of programme development and monitoring – an essential component of quality assurance in HE – it is anticipated that constructive alignment will be evident between the policy documents that mandate CT and the institutional documents that record such alignment. Within the context of this study, institutional documents refer specifically to study letters (SLs).

Constructive alignment, as envisioned by Anderson and Krathwohl (2001, p. 15-16), Biggs (2014), and Carl (2017), implies a linear alignment across national, institutional, and programme levels. This alignment must occur between national outcomes, T&L activities, and

assessment. Constructive alignment is held as an ideal practice for teaching and learning. However, the simplicity of this expectation can be disrupted by inherent parallel or linked forces affecting CT, which exist between levels, as explained below.

- At the national level to suit the state agenda.
- At the institutional level, expressed in the SLs, to ensure alignment with the state's agenda.
- At the lecturer level in espoused implementation/enactment documentation.

Having explored the CT requirements set out in curriculum and policy documents and suggested that CT should be visible as an audit trail of compliance across national, institutional, and individual lecturer documents, it is interesting to examine how CT is expressed. This study also focuses on how lecturers explain what they have recorded in SLs regarding their understanding of CT.

The ensuing section explores the understanding of CT from various literature sources focusing on philosophy and educational psychology perspectives. It may be that these perspectives are those that lecturers in P-STE have encountered and applied to knowledge in their various studies and teaching circumstances.

2.6 Where critical thinking is to be applied

The ensuing discussion explores perspectives on CT within and beyond disciplines. The first point raised concern about where and in what contexts CT occurs. The question of where CT is applied in P-STE is addressed first, followed by a discussion on the transferability of CT.

2.6.1 Critical thinking application

One might also consider CT as knowledge that extends beyond the academy (institution). This relates to the importance of that to which CT is applied, where it is applied and the discussion of everyday and academic argument (see 2.4.8). It also involves considering how lecturers perceive this aspect of CT.

2.6.2 Transferability of critical thinking across modules and within and beyond higher education

McPeck (1981) posits that "The epistemological version of subject specificity holds that in different fields, different sorts of things count as good reasons", and according to Ennis (1989, p.7), "Critical thinking varies from field to field". CT is subject-specific, meaning it is taught

formally in unique ways in a discipline or field and can never be entirely free from context. CT is not an add-on operation separate from the disciplinary knowledge base (Facione, 1990).

CT relies on semantics – the understanding of symbolic systems such as written or spoken terminology and concepts encountered in a discipline. A critical thinker must understand the language, meaning-making processes, and agenda of the subject area (discipline) (McPeck, 1981). Bailin et al. (1999) assert that the language of a discipline is central to CT because of the value placed on the explanations, evaluations, and evidence within that discipline. This view is supported by US researcher Willingham (2008) who signals language as one of the reasons that the teaching of CT is complex and even elusive.

From this, it can be inferred that when students are given the criteria for intellectual standards in CT, they must have the language skills to engage confidently to meet those standards. These standards should apply to the work being critiqued and to students' standards of thinking (Bailin, 2002). Although Bailin makes these comments about students at the start of the 21st century, they may still hold today.

What implications does the language of a discipline hold in the SA P-STE context in which this research was conducted? (see 1.5.1) Willingham (2008) insists that the depth of language of the knowledge, accompanied by the depth of knowledge that the student has are determinants of the CT that will be possible. Might the language of the discipline be impacted by linguistic diversity among lecturers and students? What impact does this have on the approach and understanding of critique and the multiple interpretations critique may evoke?

Facione (1990, p. 10) posits that "understanding the methodological principles and competence to engage in norm-regulated practices that are at the core of reasonable judgments in those specific contexts …" brings a facet of completeness to the task of CT. Ennis (1989) insists that CT is not transferable from one subject area to another but allows it may overlap or intersect with another subject area. It is important to consider if and how the transferability of CT is expressed in lecturers' constructions of CT, as transferability across varied disciplines and the vast amount of knowledge available across disciplines and on the Worldwide Web may require new theorisation of where CT is to be applied (see 2.2.5).

Three significant traditional approaches to CT influence transferability: infusion, immersion, and a mixed-method approach. The first approach is supported by Glaser (1985), Resnick (1987), Swartz (1984, 1987), as cited in Baron & Sternberg (1987), and McPeck (1981), who

favour a situation in which subject knowledge is deep, thoughtful, and well understood. They assert that students think critically in the subject where CT principles are not made explicit but are taught within the context of the subject (Bellaera et al., 2021, p. 2). This is referred to as the infusion model.

Facione (1990), Halpern (1999), and Paul (1992) contend that an explicit approach is beneficial. This approach requires specific methods of CT instruction to facilitate the development of CT skills and abilities. Sharing the CT strategies alongside the learning of subject knowledge constitutes the immersion approach, in which lecturers teach CT as embedded within the teaching of subject knowledge. This approach is favoured by theorists who advocate for field specificity in CT. Critical thinking, in this model, becomes a way to engage with subject knowledge, with both being taught and learned in parallel (Bellaera, 2021). An action research project carried out by Golden (2023) in teaching and learning of CT among pre-service teachers in Ireland, has emphasised the need for a transparent and direct approach designed by the lecturer to advance critical thinking.

The mixed-method approach is promoted by Abrami et al. (2008), Ennis (1989), Facione (1990), Sternberg (1986), and Perkins & Salomon (1989). In this approach, students receive subject-specific CT instruction while also taking a separate course that teaches general CT principles. Numerous empirical studies detail the merits and demerits of one approach over another. However, Moore (2011) reports that, despite decades of academic discussion, the matter of CT transferability between disciplines and beyond the academy remains unresolved. Theorists appear to have reached an "impasse", with limited empirical evidence to support one position over another (Ibid., p. 264). Nevertheless, Abrami et al. (2008), Alotaibi & Ismail (2024), and Alsaleh (2017) conclude that the infusion model is the most beneficial in their contexts.

Van den Berg (2000) holds that critical thinking is not taught separately but integrated into studies at South African universities. It is unknown if CT was encountered in standalone courses when the lecturers selected for this study were completing their degrees, but such courses are not commonly found today. Interestingly, this is not unique to SA. Bellaera (2021) concludes that CT is seldom offered as a standalone course in UK and US universities.

It is sometimes necessary in this literature review to refer to studies conducted among students to understand such issues when no research is available that interrogates the lecturer's

perspective. The empirical study by Van den Berg (2000) surveyed student perceptions utilising an extensive sample of participants who completed online and physical questionnaires about their need for standalone CT courses among first-year undergraduate humanities students at a selection of South African universities. The survey concludes that standalone courses would be valuable for various reasons and that students want such input from their universities. The implication is that CT is not taught as explicitly as it could be, making it the lecturer's responsibility to address it within the confines of their discipline. Hooks (2009, p. 16) states too that academics are often 'trained' to feel that they should be "right at all times". This reduces the vulnerability and openness that lecturers need to be able to embrace otherness and shed a protected viewpoint that has been in place during numerous years of study.

Understanding lecturers' views on where CT can be applied indicates whether CT is perceived as valuable, whether within a specific subject or discipline or across the academy as a whole. Perhaps CT is also intended to be applicable outside the academy. This understanding may help determine what forms of CT are used in different contexts.

Bellaera et al. (2021) in empirical research, and Bezanilla et al. (2019) in a literature review, investigate the types of CT used by lecturers and teachers. They conclude that matching types are preferred within disciplines in their respective empirical and desktop studies. These forms were labelled, but as Allison (2019) noted in his doctoral research, the way CT is discussed in theoretical terms varies when observed in practice across subjects.

The implications of whether the CT is implicit or explicit in the SL or the lecture must be considered. Such findings remind the researcher to look beyond SLs to the observed lecturers and interviews conducted in this study for clues on how the approaches are used.

I am indicating that the latter relates to discussions on CT within the academy. However, there is also the question of how transferable CT is thought to be beyond a formal academic environment. This is a matter to consider theoretically and practically, as the state expects that CT learned in HE, must be transferable to the workplace and into the life of the individual.

The issue of transferability is significant because, in the contested space of P-STE in SA HE, there appear to be few studies examining how lecturers view CT themselves and how they articulate its purpose beyond the knowledge encountered in P-STE programme modules.

The considerations for CT in this chapter highlight much of what is known about CT in other contexts and through isolated theoretical understandings. However, SA P-STE lecturer perspectives remain absent, as limited exploration of this exists.

2.7 Chapter synthesis

In this chapter, I have explored multiple theoretical, conceptual, and praxis understandings of CT to clarify how it is positioned as a well-established but dynamic field of study and its alignment with current educational demands. The literature highlights the complexity of CT concepts and practices, but it is unclear how this resonates with lecturers. Understanding how lecturers might conceptualise CT can be interpreted in light of typical SA issues, which lecturers must navigate when meeting the requirement to implement CT in P-STE.

The first challenge is the complex historical, political, and economic milieu that has evolved in SA over time. This complexity parallels the challenge of negotiating iterations of multiple theoretical, conceptual, and praxis understandings of CT developed over decades. The legacy of colonialism and apartheid has embedded knowledge and CT in the foundational principles of the WUT, which can be problematic for lecturers. The mandate for CT rests with practitioners who may be steeped in the WUT, where individualism dominates how individuals relate to knowledge. This position is incongruent with other ways of being, such as the communalism inherent in African ways of being. The ontological positioning of knowledge and the knower may influence CT.

Furthermore, the theoretical foundations of the WUT have long been considered the underpinning of knowledge and CT and continue to dominate, potentially failing to meet the diverse epistemological needs of broader educational contexts. At the same time, the curriculum and policy for CT attempt to address a modern agenda of respecting diversity, redressing past injustices, and meeting globalisation demands simultaneously. The SA HE transformation agenda is at risk of not being fulfilled if the foundational principles of CT are not well-defined and understood.

In a bid for transformation, the curriculum and policy documents offer a broad delineation of the mandates for CT, with practitioners responsible for its implementation. This implementation is concerning and fraught with issues that could impede the envisioned progress. Communication in conveying these mandates is an area of uncertainty. Firstly, there is uncertainty about whether the mandate for CT has reached the level of awareness among

lecturers that policymakers anticipate. It is unknown if lecturers engage with the mandating documents or if they have access to them. It is also unclear how the mandate reaches lecturers and what support is provided to facilitate the mandated implementation.

Furthermore, the curriculum and policy documents that mandate CT as a CCFO of education name CT and indicate where it must be applied. However, they fall short of defining CT and explaining how it must be taught and practised. These same documents criticise the past state of CT, indicating that practitioners currently fall short in implementing it and, in paradoxical statements, insist that those same practitioners are responsible for its implementation. This study attempted to establish what P-STE lecturers can share about CT.

The study explored how the lecturers' constructed ideas of CT might translate into its T&L. It also explored where CT is prepared for, learnt, and implemented in the absence of policy guidance. This study determined how P-STE lecturers negotiate the mandate to implement the CCFO CT. The specific forms of CT pursued in implementation remain unknown, and the reasons lecturers provide for the theoretical and practical aspects of CT are underexplored.

This chapter underscores the need for a study that examines how CT is conceptualised and practised to meet the CT mandate. For this reason, it would be beneficial to engage with a diverse group of lecturers in research. The concluding thoughts arising from this chapter and the design of this study benefited from a theoretical framework, which is discussed in the next chapter.

CHAPTER THREE: THEORETICAL FRAMEWORK

3.0 Introduction

In the previous chapter, based on the creation of a first lens for a theoretical framework, by means of a literature review and early document analysis of curriculum and policy documents for P-STE knowledge and CT, CT is contextualised historically. The political, social and economic context of CT is set out. It is noted that critical thinking is directed at knowledge that has foundational principles rested in the perspectives of the Western university tradition (WUT). Based on the document analysis, I suggest that the same applies to the foundational principles of critical thinking (CT) because the same documents that prescribe knowledge for the P-STE are read inter alia with documents that mandate CT. In light of the goals of the South African (SA) education transformation agenda over the past 30 years and the #FeesMustFall, and other campaigns post-1994, knowledge and CT are worried by the WUT perspective. An exploration of the phenomenon critical thinking (CT), a vast topic, is confined to theoretical and empirical literature, arising from the perspectives of philosophy and cognitive psychology in education, the literature is, as far as possible, confined to that which attends to CT in higher education (HE) where lecturers work. Demarcating the boundaries of the literature prevents the study from becoming unwieldy.

Theorists and researchers of CT and the underpinnings of knowledge explored in the literature review, do not appear to question that knowledge and CT are rested on the foundational principles of the WUT. This is a potentially problematic circumstance for knowledge and for CT in a diverse South African (SA) P-STE environment in which lecturers work. Furthermore, it is established that the policy and curriculum documents that mandate critical thinking as a critical cross-field outcome of education (CCFO), directly charge lecturers (practitioners) with the task of implementing CT. The curriculum and policy documents provide guidance on what CT is to be applied to and direct that it must be implemented. The documents fail to explain how to plan CT (implementation), what CT is, how it is to be taught, and how much is enough.

By engaging with literature on knowledge and CT, I discovered that the initial problem statement of this study is pertinent (see 1.4.2) - it is neither known what lecturers know about CT, nor how CT enactment manifests among lecturers in P-STE, nor why they construct and enact CT the way that they do. I clarify: it appears that few researchers have asked the lecturers

in SA P-STE about their notions of CT. Consequently, three research questions originally devised for the study are confirmed as pertinent also, they are:

- What are pre-service teacher education (P-STE) lecturers' constructions of critical thinking?
- How do lecturers of P-STE enact critical thinking in the P-STE curriculum?
- Why do lecturers of P-STE construct and enact CT in the way that they do?

Having refined the focus of the study, I will now construct a descriptive theoretical framework that will assist in answering the research questions, and in addressing the problem statement (see 1.4.2). Points arising from the literature review, that surface the WUT knowledge foundations of pre-service teacher education; the possible contentions and influences over time in the HE landscape; show CT as a multifaceted phenomenon; explain how curriculum and policy documents mandate CT; and point to where CT might be applicable, highlight the complexity of the study.

A multifaceted lens, the concepts of which are detailed below (3.2), will offer a means to address the complexity of components by emphasising and magnifying specific areas that the study seeks to address. I state here that currere (reactive) Pinar (2011), currere (active) Wallin (2010), and the Forcefield Model of Teacher Development (Samuel, 2008) were not originally directed to research CT. Some constructs from each of these theories are being appropriated and reappropriated, to lead a framework that will assist in exploring the phenomenon of lecturer constructions and enactments of critical thinking and reasons for such. The multifaceted lens will provide the base which can assist in knowing what to look for in the data, and it will provide a means to interpret and discuss data findings and interpretations more clearly so that the research questions can be addressed. I will also employ the framework components in discussions about the interpreted findings from the data analysis.

3.1 Overview of the chapter

This chapter is comprised of eight sections. The first section is the introduction that reiterates the role of the first lens (theoretical) through which curriculum knowledge and CT are introduced and contemplated. The problem statement and research questions are confirmed, and the multifaceted lens (conceptual frames) is declared. The overall purpose of the multifaceted lens is stated (3.0). The second section is this overview (3.1). In the third section, the concepts of currere are discussed in terms of: theoretical origins, and main concepts; the

main concepts used in this study and relevance to the study. There is a discussion about the strengths and weaknesses of the study and their relationship with other lenses in the multifaceted lens (3.2). In the fourth section, address the same set of considerations as those in 3.2, this time in relation to active currere Wallin (2010) (3.3). The fifth section focuses on the concepts of the Forcefield Model of Teacher Development in terms of the same points as those in the previous two sections (3.4). The sixth section is a discussion for how the theoretical concepts provide a lens for analysing CT constructions among lecturers. The section attends to how a multifaceted lens is to lend structure to the research design and how the interpretation of data may benefit from this lens (3.5). The seventh section is the chapter synthesis in which it is concluded that a study of P-STE CT can benefit from a bespoke framework that addresses the research questions that are now developed and settled (3.6).

3.2 The theories – literature on knowledge and CT in the Western university tradition; currere – reactive and active; the Forcefield Model of Teacher Development

The concepts from three theories will be drawn into a bespoke lens to inform the study as set out below. Each set of concepts is addressed separately, however, as the chapter progresses it becomes clear how there are layers and intersections between theories. The discussion on the components of the lens follows:

3.2.1 Theoretical origins and primary concepts of currere

Currere as a theoretical construct is the work of American scholar, William Pinar. Pinar, who leads in the field of curriculum theory avers that education (school) curriculum is in need of reconceptualisation. He qualifies the reconceptualisation does not equate to rearrangement – the curriculum must change in nature and arrangement. This curriculum theory is a conceptual project. In some sense it adopts aspects of critical theory because the views are revolutionary in the way it envisages a challenge in thinking about knowledge and curriculum. Although elements of critical theory are evident in currere the goal is different from the critical theory and critical pedagogy propounded by bell hooks, Gayatri Spivak, Paulo Freire or Ira Shor. Currere is a conceptual project for contemplation of changed thinking by the individual. Critical theory and critical pedagogy seek emancipation from oppression through collective action. Pinar (2011) advances that curriculum is shaped by historical context, sociopolitical factors such as politics and economics which are prominent structures that establish and perpetuate privilege and power in education.

Curriculum is captured by political, social and economic structures that favour conservatism and technicism. Conservatism and technicism as structures within education have little interest in democratic principles despite the claims of state (that designs curriculum) that education is an education for democracy. Consequences of the capture of curriculum is that curriculum becomes aligned with agendas that assert themselves in ways that are entrenching. Pedagogues are coerced into pedagogy that ignores and subjugates individuals through its narratives of control namely, nationally and departmentally produced policies, programme guides, sequences, and prescribed materials.

Brainwashing and submission (Pinar, 2011) points out that lecturers may be brainwashed through training and exposure to 'desirable materials and narratives' of their own curriculum experiences, to be biased and blind to the curriculum they teach and the critique that they bring to the knowledge in the curriculum. Aoki (2005, p. 358) who writes on curriculum in the North American context, suggests that a pedagogue (the lecturer) is beaten into a "gracious submission". Pinar (2011) concurs with the view of Aoki. Pinar holds that currere robs lecturers of a pedagogical life. In this study it should be asked if this view of the 'submissive' teacher exercising pedagogy is a result of conditioning, assent, ignorance, indifference or reticence to venture forth because the impact on CT will be determined to some extent by the response.

In Pinar's (2011) view, the technicist education is designed to meet the demands of economics; accompanying that position is the view that accountability drives the production of curriculum control and assessment. Thus, it is seen that Pinar's currere is interested in societies, political structures and individuals (teachers) and the education constructed for them. The position taken on education is that it has become a commodity and students are consumers of knowledge; commodification strangulates education that serves the future. Coincidentally, Pinar (2016) has delivered reports on the SA education curriculum and policy. He has inspected many of the documents that I have included in the Appendices of this study from the perspective of curriculum structure. While he notes that the post-1994 curriculum changes were well-intentioned, they are still in place, and they still serve a technicist capitalist agenda (to provide workers for the labour market). Jansen (2005) comments on curriculum as being a package only ten years after the change of curriculum; two decades later not much has changed it seems. Arising from that report (Pinar, 2016) the researcher takes a reminder from an informed

commentator on SA curriculum to consider if, where and why CT would have a place in the technicist system and whether it would be implemented.

Pinar (2011) insists that the individual is capable of leading the reconceptualisation. The reconstructionist perspective relies on an understanding of the Kantian view of the 'self' at the centre of all human endeavour in relation to a metaphysical power as set out in Chapter Two (see 2.2). Pinar (2011) rejects the Kantian notion of the 'self' because the Kantian notion holds that the self is seen in relation to that metaphysical power. That the self cannot and will not deign to transcend the power, is limiting. The transcendent power represents the unattainable, and therefore, all endeavours by the self are seen as limited. Out of this position arises doubt on the part of the self. Instead, Pinar (2011) promotes that the 'self', who through raised consciousness of and about thinking, has the potential for progress in critiquing, gaining and developing knowledge in the curriculum. The element of conscientization found in the critical pedagogy proposed by Freire (2000) is present. As in the critical pedagogy arrangement, the self could be the lecturer who Pinar (2011) insists is the defiant independent thinker (teacher) who does not fall to the service of government and other power structures. The individual is to scrutinise and interrogate the curriculum to expose how the control mechanisms are conceptualised and organised with the purpose of exposing them and rendering them toothless. Currere focuses on the structures, while critical pedagogy focusses on the pedagogy and the lecturer interaction with the students. Both rely on critique.

The proposition of the theory is that curriculum reconceptualisation is reached through humanistic and emancipatory approaches to thinking and acting differently in relation to thinking about knowledge. A means by which to achieve fundamental curriculum change is to look toward transformation within community, special interest groups and students as partners in the process (that means considering the lived reality of all groups in pedagogy that leads to change), interrogating meanings and understandings across experiences, clarifying misunderstandings, misconceptions and misinterpretations. The process of reconceptualisation requires individuals to reflect on their experiences and to share them collectively for the expansion of understanding and thinking. The outcome is conceptual – Pinar (2011) anticipates a private conceptual revolution within each lecturer (one lecturer at a time, in their own head).

The process of reconceptualisation necessitates the recognition of three timeframes. Looking to the past in the present to identify the origins of controlling and damaging curriculum structures and knowledge – looking into individual and collective contributions to existing

curriculum. Thinking about the present and knowledge in the present to address current curriculum. To live and think in the present and to think in the present to envisage the future for those in the future. Despite the focus on individualism, the collective is acknowledged in the requirement for all forms of knowledge to be admitted to thinking about and reimagining curriculum. Nevertheless, the process of breaking the power of curriculum maintenance by dominant power structures, is to expose the symbolism that has been designed for control through societal, historical, economic and political forces in the past, to reconceptualise a curriculum for the future. Le Grange (2014) engages the forces of currere conceptualising Africanisation of curriculum in higher education in South Africa. Hlatswayo & Shawa (2020) have appropriated currere for a similar purpose, and especially in relation to teaching and learning. While they do not treat currere as CT, the component of critical thinking as a major component of currere is well documented.

To expand on an earlier point about the façade presented by education as one aligned with democratic principles, I explain as follows. Pinar (2011) holds the view that a ruse of accountability to the main structure (politics and capitalist economics in the American context) is paraded as a requirement of democracy. This ruse involves creating the impression that curriculum is well administered because it holds teachers and lecturers accountable for curriculum success, and therefore, accountability is good for all citizens. That means that the power structures insidiously masquerade education as a benevolent feature of society and simultaneously parades its own prowess in creating that accountability. Instead, the accountability is a means to prescribe, implement, monitor and audit the curriculum and those who deliver and consume it. Pinar (2011, p. 70) coins the term “currere”, that helps visualise curriculum and its maintenance. He creates an analogy which helps to visualise how curriculum control is established and maintained. The concept of *currere* implies a ‘course’ in Latin, as a noun it is a course that is run, and it is also a verb which means ‘to do’ curriculum. Currere is likened to a pre-determined course as in a Roman chariot race in a stadium. The *currere* or course has ruts that are circular, deep and difficult to avoid. The ruts represent an entrenched path. Entrenchment is a central idea in currere. The analogy of rutted tracks emanates from the circuit followed and is increasingly entrenched in a circular course by chariot racers in Ancient Roman games. Pinar (2011, 2016) is deeply critical of the act of forming and maintaining entrenchments (of curriculum) by participating repeatedly in the races. The entrenchments are those factors which create the illusion that a course that is well-regulated, maintained and that it is popular. In the chariot race, the chariot driver (who might be likened to the lecturer), uses

the vehicle (chariot) and horses (knowledge), to conquer the course (curriculum), by means of understanding the physics of the course (pedagogy) and mastering horsemanship (knowledge) in specific combinations. The driver must use the forces of physics to win. Focus in this race, is on the planning and execution (pedagogy) of the race itself. One might liken that to the role of racers/ lecturers who are in the race and are relied upon to run the race of curriculum in the ruts that have already been set and which deepen (become more entrenched) each time the race is run. Everyone present in the stadium is familiar with the rules. The goal is for all to 'respect' the rules of the race (curriculum), and in this act of following the *currere* scenario, each chariot driver (teacher/lecturer) strives to become the best version of themselves. The irony of this situation is clear: the entrenchment is deepened in each race, and while the riders are glorified for their participation, they are limited by the entrenchments. Conceptual circularity is thus a partner with conceptual entrenchment as representational of the reactive force of currere (see 3.2.1).

The conceptual force of currere is discussed with reference to the relevance of its constructs to this study.

3.2.2 Primary concepts of currere used in this study and relevance to the study

The rationale for adopting the concepts of currere for this study is that critical theory and critical pedagogy addresses the conceptual forces that shape curriculum at an epistemic level by engaging the teacher to think about curriculum knowledge. The conceptual force of currere is a robust lens that directly addresses the curriculum in SA P-STE. Currere takes a sceptical view of statements and intentions in curriculum and policy documents. Through the lens of currere I am reminded to examine what knowledge intentions are stated in documents and who is deemed to be the beneficiaries of the curriculum especially in the context of educational transformation. The concept of currere alerts me to ask if that knowledge in the P-STE is legitimate given the complicated South African education history, characterised by segregationist and apartheid exclusivity and post-1994 inclusivity (see 2.2.5). It is appropriate to challenge the curriculum that has the potential to jeopardise transformation. The curerre notion of a quiet personal awareness on the part of the lecturer of currere influences on curriculum speaks to ways in which knowledge is to be challenged. It may be that CT is represented in currere. Both are valuable in forging ways to meet the CT mandate for critique of knowledge.

Pinar (2011) therefore directs the attention of the individual to what should be noted about that knowledge to avoid entrenchment and being duped and coerced. Thinking is required on the part of the individual lecturer to critique how knowledge is constructed. It is thus a fundamental critical consideration and an act of critical thinking itself. The interconnectedness between curriculum and CT is deeply forged, therefore, it is a crucial step in consideration of CT among lecturers that curriculum knowledge is consciously and deliberately scrutinised.

Pinar does not intend that reconceptualisation of the curriculum is to be achieved through pedagogical endeavour. Rather, it is to be achieved in conceptual rethinking of curriculum, as an autobiographical intellectual endeavour through (teachers and learners/ lecturers and students) becoming critical and developing consciousness to evolve knowledge, and hence constantly rewrite relevant curriculum in the academy and beyond. On this, then, they may be able to conceptually construct and reconstruct their understandings of CT. Having said that, I will need to think also about what the curriculum demands. Does it want philosophically adept students or does it want action as the outcome of education? Pinar (2011) would state that the modern curriculum wants action and that there is little call for intellectualism. It will be important to discover what lecturers in P-STE can share in this regard. A useful position that arises from currere is that curriculum is not merely a repository of knowledge; it also embraces action, skills, and attitudes, and, therefore, these must be considered in any contemplation of CT that is enacted against the curriculum.

While currere does not deal directly with CT constructions and enactments, curriculum knowledge (and perhaps other knowledge outside of the academy) is the platform on which CT occurs and to which it is directed. Setting up a framework that does not interrogate the knowledge platform in relation to CT is short-sighted in the conceptual framing of the study, and a serious omission for informing understanding of lecturer constructions of critical thinking.

Nevertheless, an inherent condition of currere as a lens is that currere is envisaged as an intellectual revolution, and, therefore, it does not necessarily translate to action on the part of the lecturer. I confirm that action is not anticipated; currere is a conceptual framing appropriated for the insights the concepts can potentially contribute to the answering of research questions.

The work of Jason Wallin suggests how the currere conceptual view about curriculum might be furthered by a conceptual force of active currere which focuses on pedagogical matters (see 3.3.1).

3.3 Active currere

3.3.1 Theoretical origins and primary concepts of active currere

I employ the conceptual forces of active currere as a visualisation of what CT pedagogy could be. Its concepts offer a platform for considering the context in which CT is situated within the broader context of SA HE. This section indicates how the concepts of active currere advance understanding of this study.

Currere is the original conceptual understanding assigned to curriculum theory by Pinar (2011). Wallin (2010) appropriates many of the concepts in the conceptual force of currere. Some additions and new propositions are added. Wallin (2010) promulgates theory (altered and altering conceptual forces) that can be brought to bear on curriculum. In this new conceptualisation (Waterhouse, 2012), Wallin distinguishes between two forms of currere: 'Reactive', implies that curriculum which is maintained in the (chariot) race that Pinar (2011) describes. 'Reactive currrere' imprints successfully upon itself to establish "normative conditions" in individual minds (Wallin, 2010, p. 5). While Pinar (2011) calls for a quiet, individual, intellectual rebellion against the established curriculum and the establishment that circumscribes its existence and content (knowledge) (the formation of normative minds), Wallin (2010) proposes more overt means of showing objection to counter curriculum control and perpetuation on worn tracks in the course (currere); this he terms the active conceptual force of currere. An active force of currere conceptualises curriculum as developing through the exploration of new and engaging content and concepts. Thus, lecturers and students who are urged towards the active force of currere, are guided to creating new pathways rather than following the well-worn ruts and tracks of the past (Waterhouse, 2012).

Wallin (2010) following on from Pinar's work, suggests that curriculum development is an image of what life could be rather than what it is. Envisaging growth calls for deviating from the entrenched tracks (of currere of the Roman chariot race) by means of liberating pedagogy. Curriculum change and growth by means of new pedagogy begins with heightened consciousness on the part of the pedagogue and exerting the will and courage to 'break free' from technicist accountability structures. The contention that arises immediately in thoughts

about reconceptualising the curriculum is that the technicist approach is interested in contents that are to be mastered and measured. Adherence to that view is then deemed enough (as has been the trend in the era of outcomes-based education) (Pinar, 2016). The significance of this point is that if lecturers in this study deem curriculum that has served agendas of the past and of now, to be enough, then they may not see the purpose or even be aware of the need to adopt liberating pedagogy. The pedagogy that encourages curriculum reconceptualisation can assist in seeing how pedagogy for CT might be structured and thus aid in interpreting how CT is influenced and enacted.

The pedagogy draws heavily on the currere notion of time. This is particularly about being in the moment and valuing 'the now', the whole 'individual self' and all that it embodies to imagine what can be. The premise for the liberated pedagogy rejects the original Kantian notions of dualism of transcendence; trusting that the individual, in pursuit of knowledge and curriculum change is capable of more than transcendent dualism tricks the individual into believing it is capable of. Wallin (2010) refers also to the work of Deleuze & Guattari (1987) about thinking that disrupts the dualism of transcendence (see 2.2). Disrupting dualism marginalises reliance on powers external to the self, metaphysical or otherwise, that are conceived of in a philosophical sense as exercising a measure of control over the individual. Wallin (2010) advocates for the liberating pedagogy to create a new curriculum by deviating from the path created by the old curriculum. In contrast to Pinar (2011) who sees that the pedagogue as deprived of a pedagogical life by power structures that dictate the curriculum, Wallin (2010) insists on the pedagogue leading a liberated life in relation to the curriculum and knowledge within it. The rebellious aims, reminiscent of those of critical theory are seen to be beneficial and maverick, not deviant. Deviance he assigns to curriculum created by dominant power structures.

Shedding the confines that humans place on their thinking and doing, is difficult because of the entrenchment to which they have been subjected through the curriculum, which insidiously masquerades as democratic and liberating. The antidote to undoing power in the curriculum is active currere's concept of drawing on artistic practice that originates in the liberation encountered in the philosophies and practices of the Liberal Arts to liberate thinking. To begin the process of curriculum reconceptualisation, it is suggested, that the pedagogue (lecturer) should follow the creative process to think about and create new knowledge. This may be where a piece of music, visual art or performance, once in progress may take chaotic directions as it

unfolds and even after it is completed. An important feature of active currere is that it maintains the view that within the creative process, all knowledge is valid in the curriculum and must be brought to the fore. The pedagogy is central to reactive currere and it is envisaged as a collective task of the lecturer and students. The creativity which unfolds is represented by the concept of lines of flight. Lines of flight is a term that arises from the philosophical concept of lines of flight proposed by Deleuze & Guattari (2008) whose philosophical work contemplates the relationships of humans in socio-political structures. Lines of flight provides a useful metaphor for liberation. The conceptual active currere approach creates unorthodox curriculum development strategies that defy control. The relevance of this conceptualisation is offered below.

Issues which arise from the reactive force conceptualisation of pedagogy is that the expectation for students to be creative may be contested. Students from disciplines other than the liberal arts may be reluctant to be drawn into creative situations. In active currere, a gradual introduction would be needed to accommodate adjustments on the parts of the lecturer and the students. Such an approach would need to begin with planning for pedagogy and not everyone necessarily has that skill or the inclination to do so. Wallin (2010) advances that it should not be assumed that the pedagogue would know how to teach this way, therefore, if active currere were to be embraced, pedagogues would need to be guided strongly.

3.3.2 Primary concepts used in this study and relevance to the study

The pedagogy to bring about the new thinking about curriculum should embrace the active force of currere. It is envisaged that lecturers should engage with students to develop, rather than impose the curriculum on them; an altogether subtle but promising shift from the individual lecturer and student pursuing knowledge separately as individuals as encountered in the WUT (see 2.2.1). Deleuze & Guattari (1987), who inspire Wallin (2010) insist that it is ridiculous for an individual (persona) to consider itself in isolation; hence Wallin holds that no one persona exists in isolation. Wallin (2010) envisages pedagogy in which there is *collective action, interaction, integration and a relinquishing of power* by the lecturer. Active currere pedagogy necessitates dialogue and a conscious awareness for changed thinking about CT to come to fruition.

It signals a significant shift from the self as a solitary figure, to one who acknowledges all individuals. The reliance on individual experience and knowledge, of all students is

foregrounded as valuable, and the lecturer seeks to remove restrictions and surface that which would otherwise go undetected.

In the SA HE context, transcending dualism as a perspective of the ontological foundation of knowledge and the pedagogue, runs contrary to inclusion of individuals who consider and embrace being and curriculum, as a communitarian formulation (Higgs & Le Grange, 2012) in the spirit of *ubuntu* (Enslin & Horsthemke, 2015). Such community formulations might view pursuance of individualism as unfulfilling from the perspective of not engaging in communal identification and practices and thus failing to acknowledge a shared identity. Consideration of the concept of *ubuntu* and discussion about its advantages and disadvantages in moving towards transformation. The consideration is integral to understanding the insights of participants who must work with curriculum, knowledge and the critical thinking enacted upon it. If the conceptual force of active currere were to be operationalised in lectures, the pedagogue would need to take account of the realities of SA HE.

Complete openness and creative freedom promoted by active currere may be well intentioned, however, it may also be conceived of as unsuited to expressions of collective cultures. Mason (2007) issues a caveat which suggests it is incorrect to assume the following points a) that all collective cultures hold uniform values and follow uniform practices b) that all practices translate to inclusion and oneness. For example, while Green, Reich and Neubert (2012) do not write specifically in relation to the use of active currere, I note in their study, their challenge of the appropriateness of Deweyan (1910) conceptions of 'otherness' conceived of in a US multicultural context. A multicultural US context, as contemplated by Dewey (1910), cannot be assumed to be understanding of 'other' in differing multicultural settings. The consideration to be taken from this is that South African multicultural structures are uniquely complex, and therefore, this is a consideration for the implementation of active currere. The approach needs to be viewed from local perspectives. Another important concept on which the active currere approach to pedagogy is constructed is related to respect for otherness.

A reactive currere view would refute that (lived experiences) and otherness is less valuable or of no consequence at all, and so too does the currere refute this view. Odora-Hoppers and Richards (2012) challenge the SA curriculum to see the lived experience as that of the whole human being (their emotion, pain, hunger, anger, desire and more) because humanistic approaches, which characterise large areas of SA HE (Amin, 2016), recognise the value of such. The questions arising from a discussion about lived experience as a component of

knowledge the must be admitted to pedagogy is lived experience. The pertinence of the notion of openness and freedom and the value of lived experience is the consideration for how CT might be approached in this study.

As a consideration for methodology for this study, the selected participants must be of representative of varied linguistic, religious, racial, and cultural backgrounds, and represent 'otherness' not of the WUT, the SA population being diverse so that the matter of CT about knowledge might be viewed through varied lecturer lenses. Also, from a methodological planning perspective in this study, the ideas expressed in how one activates the active force of currere calls for observation and listening to lecturers' perceptions. This would enable interpretation of their relationship with knowledge, how they view themselves in relation to prescribed knowledge in the P-STE programme, and how they act within the P-STE curriculum. How lecturers relate to prescribed knowledge and their pedagogical activity has a direct link to understanding the influences on CT about knowledge teaching and learning. A discussion on the active force of currere is beneficial as a ground plan for viewing the pedagogical focus of lecturers working with knowledge and CT in this study. In my view, the active currere concept has the potential to be considered a form of CT at individual pedagogy level. The way in which the active force of currere is related to CT holds potential to recognise such pedagogy and expression among lecturers in this study as they construct, declare and enact CT.

The analysis of national and institutional curriculum and policy documents, and module documents for P-STE conducted in this study, have been useful in establishing what lecturers are mandated to teach. It will not suffice to determine how lecturers address knowledge and how they approach CT. Selecting active currere as an example of how pedagogy for a reconceptualisation of curriculum signals how CT might be approached.

Critique levelled at the conceptual force of active currere begins with the point that the lines-of-flight concept is too philosophical to contemplate the issues of reality. An example might be the feasibility and subjectivity in relation to logistics and resource availability such as time to develop the ideal pedagogical environments and to build trust to be effective. The standardisation of curriculum might be negatively affected by the unique knowledge that issues from the freedom afforded students to explore especially in relation to assessment. The emphasis placed on personal lived experience is possibly inadequate to address a full range and depth of knowledge required in HE. Lecturers would need specialised training to pursue the pedagogy that encourages creativity. Activating the active force of currere in pedagogy creates

more chaotic outcomes than implementing critical theory or critical pedagogy in teaching and learning. They are all in the genre of disrupting the curriculum knowledge and thinking about the curriculum knowledge, and all its underlying motives and intentions in new and creative ways. McPeck (1981) is noted as saying that the effects of critical thinking are not considered. Waterhouse (2012) adds that active currere seeks not to satisfy its closure of thinking but to leave it open-ended and unfinished because creativity does not seek closure but opening up. I would suggest that some of the effects of active currere, like those of CT, are not welcome. I move that these criticisms of the work of Wallin are very useful as a preparation for what lecturers might reveal about pedagogy for CT. Perhaps CT faces similar issues because it is inconvenient and uncomfortable for curriculum creators to countenance the conscious critique which is advocated in critical theory, critical pedagogy and active currere approaches to teaching and learning.

3.4 Forcefield Model of Teacher Development

3.4.1 Theoretical origins and primary concepts of the Forcefield Model of Teacher Development

The Forcefield Model of Teacher Development (Samuel, 2008) was created originally to explore conceptual forces that influence the development of pre-service teachers (P-STs) identity. The model that emerged from research was suggested as a platform from which to launch a conversation about how to view pre-service teachers' development of teacher identity. The context for the research was conceptions of the teachers' role and identity in South Africa where education has evolved within changing social, historical and political settings (Samuel, 2008).

The FMTD draws on a human developmental, psychological perspective that propose macro-, meso- and micro- levels of influence. These forces are not unlike those formulated in the socio-ecological systems theory proposed by Bronfenbrenner (1992) (see 3.4.2). The FMTD draws on the field of chemistry for analogy – the properties of an electron – a force field, electron, charge, energy and the influence of external forces. In the original context in which the model is created, the individual teacher (and the conception of their role and identity) is likened to an electron orbiting an atom (and the presence of accompanying forcefields). The forces are treated as axiomatic in the same way that forces of society are present in the existence of humans). Typically, in the analogous structure of physics, the forces differ in terms of properties, presence, intensity and the significance of meaning. The properties of an electron

represent a changing relationship and intensity of influence of factors within forces over time within individuals and across individuals. I adopt the principles emergent from the analogy rather than the analogous symbol itself for this research, to open the possibility of a new framing of the influences on individual lecturers' critical thinking.

3.4.2 Primary concepts used in this study, and relevance to the study

The principles of the Forcefield Model of Teacher Development (Samuel, 2008) lend a conceptual framing within which to organise writing about and interpreting issues influencing the *individual* in the P-STE milieu in which CT is located.

The principles of the FMTD have not been used previously as a framework for a study on lecturers' constructions of critical thinking, but I believe that they are salient for this study for various reasons. a) Conceptions of the teachers' role and identity in this model have evolved within the changing social, historical and political settings in SA (Samuel, 2008) b) Their value in framing the conceptual forces that assert themselves specifically on adults (lecturers), as opposed to learners in schools which is the case with the socio-ecological lens of Bronfenbrenner (1992). The FMTD addresses the forces extant on lecturers and the adult students whom they teach. The data collection instrument intended for use in this study is a biographical questionnaire that will ask how the P-STE lecturers' biographical and professional experience are directed at adults (see Appendix C). There should be a constant consideration in the study that this study pertains to adults. c) Since the context for this research is South Africa, the FMTD is appropriate for a SA study.

The FMTD, in strong respects resonates with Bronfenbrenner's bio-ecological model (1992), which posits that there is permeability between layers that represent micro, meso and macro influences in the life of developing humans. The nature of the permeability is not simply mechanistic but dynamic just as with the forcefield structure proposed in the FMTD. Furthermore, as with Bronfenbrenner's model, the forces of the FMTD can be seen to co-exist in the individual space (a form of complexity); a wholly useful idea that is representative of reality rather than there being an insistence on unintegrated, unrelated forces that a mechanistic reading and interpretation of a model can insinuate.

I believe the model forces (named as biographical, political, historical, institutional and programmatic) can assist in moving towards devising research questions and a framing for methodological design. The forces can guide a study that explores how lecturers (as adults),

working with SA P-STE adult learners, construct and enact critical thinking. Most significantly, the FMTD is the lens through which to view what lecturers claim to be reasons for their critical thinking constructions and enactments.

Table 1 offers a tabular representation of the model's principles related to forces.

Table 1

Forces of the Forcefield Model of Teacher Development

1st force	2nd force	3rd force	4th force
biographical (inertial forces)	macro-social (political and historical forces)	institutional (micro-contextual forces)	programmatic forces

> Each of these forces professes ideological theoretical positions about what teachers' roles and identities ought to be (Samuel, 2008, p. 11).

Samuel (2008) holds that the forces influencing the development of teacher identity "are complementary and contradictory" and "they are neither stable nor unitary" and their consequence can have positive and negative effects on individuals (Samuel, 2008, p. 14). The factors in Samuel's model are in no way exclusive of theories propounded in other literature, which means they can function in relation to other complementary and conflicting forces that may present themselves in other theories appropriated in a multifaceted lens or in relation to others that emerge in this study.

Samuel (2008) illustrates convincingly that teachers are influenced by the forces. The forces are exerted in multiple ways. Given that the participants in this study are to be only those who have spent their lives in South Africa, I proffer that some of those teachers, of whom Samuel writes, are now lecturers of pre-service teachers in the higher education institution where my research is situated. The FMTD provides a lens that could explain how critical thinking constructions of lecturers who were subject to permutations of those forces through their journey to the HE environment, might have been influenced; particularly those lecturers who gained their professional teaching qualification in pre-1994 years. It is from the lecturers themselves that we seek new understandings about the influence of factors within forces in the FMTD and possibly others not yet uncovered. Samuel (2008) reports how teachers recount the influence of factors on their development dependent on the audience, purpose and context for

whom the responses are crafted. I heed those sentiments as a caveat for data gathering endeavours and interpretation in this research.

Samuel (2008) proposes the potential for paradoxes to be detected among the forces. This notion of paradoxes signals the acknowledgement, and existence of complexity, which is useful for understanding connections and interpretations of data that are developed from research.

There is a direct link between the forces listed in Table 1 and the historical, political, programmatic and institutional contextual realities of HE and P-STE that the researcher detailed in Chapter One. Establishing the circumstances of P-STE knowledge and curriculum is more than a mere orientation of context, locale and positionality for the reader; it is the very essence of lecturers' identity formation, as Samuel (2008) has been at pains to profess.

Another factor is that of time. Each theorist uses the dynamic of time for different purposes. Time is a feature of both the FMTD and of the Bronfenbrenner model. Time is considered a factor which plays a role in shaping how CT is conceived of, and changes (if any) accompanying iterations thereof. Curerre treats prevailing and changing politics and economics as representative of the passing of time. Currere also calls on past, present and future time to be an element of the cognitive activity that surfaces in discussion about how curriculum arrived at its present state. Active currere requires knowledge of different times to be set aside so that knowledge can be designed for a future time. In the FMTD time is an influencer in biography, and politics and history. Time is a factor affecting knowledge as time passes. However, time is no guarantee of change or gain without the cognitive and active effort on the part of the individual to effect it.

Over time, historical and political forces were strongly evident in SA education, creating shifts on a national scale. The historical and political forces are identified as macro-social forces.

The forces are named and discussed below:

Macro-social (historical and political) forces

The macro-social forces that shape the national curriculum and policy documents and intention, and mandated implementation of critical thinking at a national level are two such factors which have already been addressed. The currere lens deals with national level requirements for knowledge and CT in depth. The FMTD contends that macro-social forces which are of historical and political origin orbit the life of the developing teacher. The FMTD looks at the

effect on the individual. It can be argued that historical and political influences are integrated as has been noted by Pinar (2011) and Wallin (2010). The historical force that might be contingent on any one lecturer in SA is that the political designs for education shaped the curriculum and that the policy was imposed along racial lines (see 1.2.2). According to the multiple relationships made possible by referring to the principles of the FMTD, it can be noted that historical factors which influence the individual lecturer are those which are influenced by political factors. The political factors, in turn, through politically and socially engineered means of schooling, religion, culture can shape biographical factors. Biographical factors in turn are not outside of the individual but rather they form the very essence of their being and identity; a point to pursue later in this chapter (see Table 1). In the past five decades, teachers experienced shifts, which resulted in them forming their identities in relation to those factors of change – trends in macro-social, political and historical factors (Samuel, 2008, p. 7). The formation of those identities endures within individuals (agents/personae) today. In SA, those forces exist in unique combinations within teachers and lecturers who interpret or frame their relationship to professional development or, in this instance, lecturing, and teaching and learning, for knowledge and CT. The formation of identities is fluid with the intensity of some forces being greater or lesser at different times.

Inclusion of the historical and political influences is not an attempt to provide a simplistic account of a contextual landscape. My suggestion that lecturers who were once these same teachers or students pre-and-post-1994 might seem irrelevant, but in truth, it is not. In SA, those forces exist in unique combinations within teachers or lecturers who interpret or frame their relationship to professional development or, in this instance, lecturing pedagogy for CT. Samuel (2008) suggests that the political/historical, and programme expectations of teachers in a particular era of teacher education are of influence, and I suggest that is extant on constructions and enactments of CT and why they do what they do.

Biographical forces

The factors of biographical force influencing teachers' development are race, class, gender, language, age, lived experience of schooling and stage in a career (Samuel, 2008, p. 9). Samuel (2008) strongly advises that universities heed the biographical and other forces acting on teachers/lecturers because they are significant. I believe its power in influencing CT in the individual is easily overlooked because they are individual and difficult to address. The biographical force orbits close to the individual (lecturer). As a force close to the individual

lecturer; it shapes their very identity because it indicates personal factors, strongly and closely experienced, emanating from family and community. Those are, in turn, influenced by experiences encountered by the individual because of their race, for example. It is valuable thinking that informs how theory designed for learners in school is not always relevant in the context of adult development. This force (biographical force) (Samuel, 2008) accounts for deep impressions and many experiences for a wide range of South Africans during the apartheid era and beyond. Adults have a biographical history that is more extensive than that of children, hence the importance of theory in this study being relative to adults rather than children. According to post-colonial and critical theory commentators such as Spivak (1990) as cited in (Samuel, Dhunpath & Amin, 2016); Maldonado-Torres (2007) and Amin, Samuel & Dhunpath (2016), it endures in the present. Thus, a lecturer's age might have been significant in this study because the historical and political climate that they encountered in pre-1994 education (and life-in-general) would have influenced the standard of schooling received by individuals from different race groups under a racially divisive system. The historical and political forces are seen to overlap and compete for assertion. Both forces might be jettisoned to be replaced by an inertial force that prevents an individual from proceeding into new spaces, or alternatively venturing out to take on new challenges.

Perry (as cited in Halonen, 1995, p. 78) makes a case for critical thinking being influenced by age and the student stage of cognitive development – increasing age being associated with increased challenge of authority; age is a biographical force (Samuel, 2008). Furthermore, a lecturer's gender would be a variable factor in education, as boys and girls were assigned roles in a strongly patriarchal society that remains evident in SA today (Mudau & Obadire, 2017). Gender might influence permission to speak and venture an opinion. Additionally, the gender and age of lecturer might bring further combinations of permission given that older persons of a gender may be perceived to have greater permissions to speak than younger persons.

Clinchy (1989), who works in the feminist paradigm is inclined to think that participation in critical thinking is influenced by gender, particularly females who would choose to agree and conform rather than challenge. Minnich (1997) whose feminist paradigm frames her writing, found that women who engage in thinking, for example in politics, are affected by societal views of the time of how women should behave in relation to being vocal or holding an opinion and being active in an area of academics that are traditionally the domain of men. In South Africa there is a strong prevalence of female gender inequality. Gender inequality has featured

strongly in narratives in the UK and South Africa (Ramaphosa, 2020; Thomson, 2020). A study by Breetzke and Hedding (2018, p. 150) reported that in 2015, 53% of SA higher education academics were male, in contrast to the P-STE context of this research which has an 85% female lecturer presence. The latter is hardly surprising since school teaching is a female-dominated profession in South Africa (Bhana & Moosa, 2016, p. 3), and many lecturers in P-STE move from school teaching into P-STE. Given the high representation of females in HE and schooling sectors, the influence of gender on the teaching and learning of CT could be significant in this study.

The political régime has changed, the outcomes of education remain the tools of economic and political wish with inadequate thought for how this will be achieved in the socio-economically divided 21st Century South Africa. I wonder at the influence of politics and sustained social engineering (political, historical, socio-economic), which exerted a strong influence over knowledge and, by extension I believe, our permissions and construction of critical thinking. Lecturers came to P-STE lecturing by the route of differing pathways, dependent on age, language and cultural groups (biography); those actors likely being significant because of the restrictions and influences on education, knowledge and thinking presented by apartheid and subsequent post-apartheid structures as discussed in Chapter Two.

It is the view of Msibi (2016, p. 223) that there may be lecturers who treat the curriculum and programme knowledge as devoid of politics, sociology, economics, race, gender, psychology, age and language. This makes for a "complicated, tension-ridden, uncertain, complex, contradictory, messy, uncontrollable, …" experience. It reminds the researcher that the lecturers, who participate in this study came to P-STE lecturing by various routes depending on their age, gender, language and ethnic group (biographical); those factors may be significant because of the restrictions and influences on education, knowledge and thinking that they have experienced. It heightens awareness that the biographical force is not singular; it is integrated and complex (Samuel, 2008).

Macro-social historical and political forces

The FMTD contends that macro-social forces, which are of historical and political origin, orbit the life of the developing teacher. The macro-social force of national curriculum and policy intention, and mandated implementation of critical thinking, at a national level, are two such factors which have already been addressed. The currere lens deals with the national level knowledge and CT in depth. The FMTD looks at the effects on the lecturer that will assist in

understanding what influences CT. It can be argued that historical and political influences are integrated as has been noted by Pinar (2011) and Wallin (2010). The historical force that might be contingent on any one lecturer in SA is that the political designs for education shaped the curriculum and that the policy was imposed along racial lines (see 3.2.1). According to the multiple relationships made possible by referring to the forces of the FMTD, it can be noted that historical factors which influence the individual lecturer are those which are influenced by political factors. The political factors in turn, through schooling, religion and culture can shape biographical factors. The biographical factors, in turn, are not outside of the individual but rather, they form the very essence of their being and identity; already pursued in earlier section of this chapter. (see Table 1)

The inclusion of the historical description of the historical backdrop is not to provide a simplistic account of a contextual landscape. My suggestion that lecturers who were once these same teachers or students pre- and-post 1994 might seem irrelevant, but, in truth, it is not. In SA, those forces exist in unique combinations within teachers or lecturers who interpret or frame their relationship to professional development or, in this instance, lecturing pedagogy for CT. Samuel (2008) suggests that the political/historical, and programme expectations of teachers in a particular era of teacher education are of influence. I suggest that is extant on the constructions and enactments of CT and why they do what they do.

Programmatic forces

The programmatic forces are an amalgamation of the forces that occur with one another in the forcefield in differing strengths and attractions. At times they are the institutional force which has been the lecturer experience of HE in SA: a totality of their teacher preparation that is needed to carry an individual through a challenge of, for example, preparing for a large portion of pedagogy for the year, or managing a classroom where learners require structure and guidance. The programmatic force may manifest as the quality of lecturing and experiences the teacher has experienced in their trajectory to becoming a professional or academic. At other times, the institutional force may be experiences shaped by the way in which the teacher aligned themselves during their years of HE study. It might be that they focussed on social justice issues and community work, or sport, or politics. All of those could shape teacher identity. Those teachers sometimes become lecturers irrespective of whether they have prepared for a professional teacher education by the route of a one-year postgraduate certificate, or as a specific education qualification in an undergraduate degree. The institutional forces are

considerably varied and may be present at different times in varying strengths and prominence as the situation provides. This is a platform from which to consider the input of participants in research as they share their views on CT. The manner in which the institutional force is demonstrated above informs the researcher that in the field, receiving and interpreting the points that participants may share on this influence, their responses may differ from one day to the next, and they may alter contingent on other forces which could be considered more prominent at that moment. The forces can compete and even compete with one another. The importance of that statement is not to emphasise competition, it is simply to indicate that the FMTD contemplates a reflection of a complex reality.

Institutional forces

Little exists that offers a contextually suitable and rich empirical consideration of the points raised at this point in the chapter. Drawing on the institutional force identified in the FMTD (Samuel, 2008) reminds that P-STE lecturers who will be selected to participate in this study will need to have been immersed in the South African education milieu. Most would have attended school between 1970 and 1995 and would have attended universities and colleges where they were lectured by lecturers from earlier generations. Since then, it has been anticipated that teachers' roles and identities have altered a great deal on the surface, but not necessarily at deeper levels in a large part as a result of the nature of the institution itself (Jansen, 2017; Leibowitz & Bozalek, 2015; Ramrathan, Le Grange & Higgs, 2017). The institution (higher education) has an unspoken regulating effect on the extent to which lecturers and students can proceed with CT and the consequences thereof.

Samuel (2008, p. 13) indicates a dichotomy at a micro-contextual level between the ideal that teachers identify for themselves and the institution's influence in encouraging or suppressing individual development.

The institutional force incorporates factors which are entrenched in institutional climate and culture, ethos, norms and values (Perumal, 2009; Samuel, 2008, p. 12) to which the individual acquiesces, ascends or exits depending on personal bent.

How do lecturers who work in conservative institutions preparing P-STs for a conservative profession venture into CT? At an institutional level, "critical thinking is controversial." (Sears & Parsons, 1991, p. 54) which means that the lecturer implementing critical thinking may tread on corns that are hidden in the shoe of the institutional ethos, values and beliefs – it is a risk to

engage and what does the lecturer do when a corn has been trodden? Effectively then, it is desired that CT should be exercised to challenge great minds, but it is not always welcome in the workplace.

Influential leadership and management informed by research within an institution, and a willingness to implement and monitor quality teaching and learning settings, are micro influences that shape teachers' identity and development and thus, surely also the attention and pursuit of mandated CT. Minnich (cited in Halonen, 1995, p. 75) indicates that institutional and other political agendas are influential in determining how CT is conceived of and taught in undergraduate courses. Institutional forces may also refer to overt influential leadership and management factors which may or may not be informed by research, and a willingness to implement and monitor quality teaching and learning settings is an influence which shapes teacher identity and development, and thus, surely too, the pursuit of CT.

The consideration of the institutional force could refer to how the institution attends to managing the dissemination of information that is central to the work of the teacher, or in this case the lecturer. I refer here to documents that must be made available for the work of professionals to be compliant and informed. The institutional force might relate to the maintenance of accountability in terms initiating processes, procedures and then monitoring evaluating and consolidating those tasks. The task of engaging the empirical work becomes more pertinent in my study. Little exists that offers a contextually suitable and rich empirical consideration of the points raised at this point in the chapter, in relation to CT and P-STE lecturers.

Inertial Forces

A significant aspect of the FMTD that is invaluable in this study, is the proposition that inertial forces emerge in the biographical force. By this I mean the situation in which Samuel (2008) states that when faced with a challenge, teachers (lecturers) find comfort in old ways which has the effect of them either 'shrinking back' to the comfort, safety and familiarity of past ways determined by biographical, programmatic, and historical forces, or using the inertial energy of the past to propel new ways when changes or challenges have come their way. One such challenge may be critical thinking thus, the forces potentially influence how and why CT could be ignored, marginalised or advanced.

3.5 A unique multifaceted lens to guide this study

The multifaceted lens lends different views to the study. Each lens focus offers specific different aspects as set out below:

The literature review
(at a NATIONAL level - attempts to establish *what* CT is and, by whom it must be enacted)

- looks at the ontological views that potentially connect knower (lecturer) and knowledge in HE in SA
- it identifies knowledge prescribed for P-STE in the national curriculum and policy documents
- it reveals (by means of an early document analysis) that knowledge, and curriculum and policy documents, that mandate CT in HE and P-STE are supported by theoretical concepts arising from perspectives of the Western university tradition (WUT)
- the literature review situates CT (globally and in the SA HE context) through the lens of cognitive educational psychology and philosophy.
- The literature review framework establishes who is responsible for CT. The literature review questions the suitability of knowledge and CT foundations.

Currere and active currere
(at a NATIONAL and INDIVIDUAL level attempts to view how CT is enacted)

(at a NATIONAL level – utilises the theoretical concept of reactive currere (Pinar, 2011))

- Contemplates what knowledge is envisaged for P-STE and therefore it helps to consider what CT is directed towards and where CT is applied (in terms of context and theoretical understanding)

(at an INDIVIDUAL level – utilises the concept of active currere (Wallin, 2010))

- Provides the scaffolded view of how pedagogy for CT might be enacted by the individual
  - staid and perpetuated in ways of old

  or
  - liberated, changing and creative.

The Forcefield Model of Teacher Development

> At the INDIVIDUAL level, the FMTD provides a guide for the factors that might have influence on lecturer CT in respect of their:
>
> - constructions
> - enactments of CT

(theory and praxis).

This framework is a temporary lens through which to view the combination of knowledge and CT in lecturers of P-STE. It is also intended to add new theoretical perspectives to the study in that this phenomenon among P-STE lecturers has not been set out in this multifaceted combination before, nor has this range of questions about CT been raised for lecturers to respond to. The unique framing is intended to lead a study which heightens awareness of the foundational principles on which CT is built, it interrogates the knowledge that CT critiques from a new angle. The multifaceted lens should clearly help to illuminate and suggest ways of thinking about CT.

3.6 Chapter synthesis

The first framing in the multifaceted lens serves to help consider that CT could be concrete or abstract, theoretically or practically constructed. It establishes the expectations of curriculum and policy in relation to the CCFO, the places it is to be applied and the circumstances in which CT is to be exercised. The responsibility for CT is established. This provides a basis for considering what still needs to be known about CT. The first lens establishes that CT is to be enacted against curriculum knowledge. The currere lens looks at aspects of the knowledge to understand what influences knowledge.

From curriculum theory (a second set of concepts) Pinar (2011) theorises about curriculum with the effect of awakening the researcher to consider the context in which curriculum knowledge is established, how it is established, and what its goals are. This leads to clarity on what CT is directed at and how CT can be related to the knowledge. In this research it is treated as structure for contemplating the knowledge (content and context) on which CT is to be carried out.

An extension of the second selection of concepts are from an iterative extension of currere, in which Wallin (2010) posits that there is a distinction to be made between curriculum stasis,

and conceptualising curriculum knowledge in alternative ways. Wallin proposes new and creative ways of thinking about knowledge; possibly a form of critical thinking itself and this serves as a framing in which to contemplate not only curriculum but also provides a means to imagine ways in which CT is to be implemented. The lens is an example of what a pedagogy for CT might be comprised of and what challenges are envisaged in the pedagogical approaches.

The third selection of concepts are those advanced in the Forcefield Model of Teacher Education (Samuel, 2008) that offers a lens to guide assumptions about what forces may be contingent on lecturers at an individual level as they implement CT and construct and enact CT.

A unique multifaceted lens is specifically devised to lend form to the analysis of data that is explored in this empirical study. The largely unexplored topic of CT construction and enactment among pre-service teacher education lecturers requires form and direction; the focus of each lens supports the research questions in simultaneously overlapping, layered and separate ways. A single lens would not offer the depth and breadth that this group of lenses provides. This multifaceted lens has attended to macro, meso- and micro- level insights. The lens organises what is known and what is still to be known about the lecturer who is constructing and enacting CT in SA P-STE

This chapter aggregates a section of the conceptual framework for this study on which a suitable methodological approach will be created and applied.

CHAPTER FOUR: RESEARCH METHODOLOGICAL DESIGN

4.0 Introduction

In Chapter Three, the framing of knower, knowledge and critical thinking, through the temporary lens of conceptual forces of *currere* and the conceptual forces of the FMTD have led to the development of critical questions and specific questions for this study. In the methodological design for this study on critical thinking, I approach the tasks of observation, interview and data analysis as more than empirical tasks; instead. treating them in a philosophical way that valourises their open-ended nature. While the aim of the methodological design is to keep open-endedness and relative objectivity at the forefront of the study, it might be misconstrued that there is too little planning. However, planned research is the hallmark of *dependability* in qualitative research (Krefting, 1991). Krefting avers that it was only possible to plan for the anticipated, not the unanticipated. For that part of the research which could be anticipated, I employed a qualitative approach and interpretive paradigm in order to accommodate what is unanticipated. The approach harnesses the power of a case study and, within them, attention to the senses of sight and sound and the use of thematic analysis (Braun & Clarke, 2021). Thematic analysis assists in the exploration of lecturer constructions of critical thinking by permitting the researcher to arrange readings in themes which I employed in the hope of finding new understandings of lecturer thinking about thinking.

4.1 Overview of the chapter

This chapter comprises thirteen sections, the first of which declares the methodological design. The decision to engage in qualitative research in an interpretive paradigm is rationalised (4.2). A case study approach is selected for an educational setting (4.3). The sampling procedures used to select participants are provided (4.4). The next section addresses the method selection and design and the first steps in the data collection and data generation processes. A document search was adopted for reading national and institutional curriculum and policy documents, and this is discussed as part of the case study approach (4.5). This section outlines the preparation for entry to the field and the actions and practical considerations within the fieldwork phase of the research. Theory informs practice to overcome the hurdles encountered in the field. Having anticipated my positionality as a researcher, I return to the topic to reflect on the development of further consideration of observations as a form of data production (4.6).

I explain the use of field notes and memos (4.7). The multiple considerations accompanying the use of semi-structured interviews are discussed (4.8). I include a section on researcher reflexivity and discuss the measures employed to bring trustworthiness to the research (4.9). Ethics, as they pertained to this study, are explained (4.10). The thematic analysis of data specific to this study is clarified, while thematic analysis techniques are applied to permit increasing levels of abstraction (4.11). The study's limitations are explained (4.12). The final section presents a synthesis of the relevance of the methodological design employed for this study (4.13).

4.2 Qualitative research

The research questions inform the choice of the research approach. I argue for a qualitative approach because it enables the researcher to treat the context of the research and its contextual situation as unique, considering a given range of circumstances. It does the same for the participants; this philosophical perspective of the situated self in context is offered by Alharahsheh and Pius (2020). My ontological inclination concurs with the foregoing statement – my relative realist stance claims that the human, 'self', exists separately from its surroundings but is dependent on them (Wallace, 1882). It is a position that emerged from the Western university tradition (WUT) in which I was schooled. Also emanating from the WUT is the notion that I must exercise a *consciousness* of my position as the researcher, to do justice to the task of interpreting the experiences of others (see 2.2.1). The lecturers who lecture pre-service teachers are the potential individual 'self' in this study and I too am a 'self' juxtaposed with context – there is thus a relationship. They are the 'self', and I am 'the self'; collectively and individually we are capable of converting our experiences into language and action, which can be observed and brought into discourse through the use of various methods designed for research. The research was a naturalistic inquiry that Schmid (1981) defined in terms of two principles: 1) physical – the physical, sociocultural and psychological environment influences behaviour and 2) behavioural – behaviour is more than that observed by the investigator; it underscores the importance of understanding and perceptions of the subject. The task was mine to lead.

Adopting the philosophical assumptions of interpretivism seeks to understand the nature of knowledge through the interrogation of assumptions and values adopted by the researcher and participants (epistemology) as suggested by Hammond and Wellington (2020). It both guides the design of the scientific methods used which Hammond and Wellington (2020) deem

impossible to remove entirely from an interpretivist approach, and works with knowledge and the participants to generate new knowledge (methodology) (Taylor & Medina, 2013). Its value to the researcher is that it recognises the value of working directly with the participants' experiences. The participants are seen as having knowledge and experience shaped by their preferences, prejudices and interactions with others (Schutt, 2015). It also attempts to understand how the participants, in their interaction with others, give meaning to their reality and experiences (epistemology). Typified in this quote:

> Firstly, epistemological considerations provide the logic of an enquiry and without understanding that logic the research will be incoherent. (Hammond & Wellington, 2020, p. 79)

The researcher is not a participant in this research, therefore, it is incumbent on the researcher, in the interpretive paradigm, to explain their thinking within the research process (Cohen et al., 2011). Furthermore, in calling on a qualitative paradigmatic view, I declare a distinction in this research which Tarozzi (2022) recognises as research in education, as opposed to educational research. The impact of claiming the former term is that the design of the research should respond in specific ways. The research in education has been controlled by politics and pedagogy that is accompanied by a sense of loyalty and obedience of educators (Tarozzi, 2022). Post-positivists have devised arguments to oust the view that qualitative design lacks scientific rigour and the result has been evidence-based education which has been in demand for the past three decades. The qualitative approach of this study goes directly to the heart of critical thinking constructions and enactments by lecturers in asking for lecturer views of critical thinking. The qualitative leanings in this study are those which question democracy in education on many levels, while being scientifically exacting in the design of the study. There is no claim to the exactitudes of science per se, it is rigour that is sought in the qualitative design. In this study, a qualitative process commences with exploring constructions of critical thinking among the participants.

4.3 Case study methodology

A c*ase study is a form of naturalistic inquiry.* It "is an investigation into a specific instance or phenomenon in its real-life context" (Arsenault & Anderson 1998, p.121; Flick (2004) as cited in Cohen et al., 2011). I note that my choice of a case study methodology is not unusual in an education setting even though it has its roots in the medical field (Krefting, 1991; Sandelowski,

1986), the behavioural or social sciences and education (Stake, 1995; Yin, 2014). The use of a single-site case study was intended to gain meaning, explore attributes and discover characteristics about the participants' constructions of knowledge and critical thinking and was thus exploratory. The triumph of the qualitative approach that utilises case study is its ability to render in-depth understandings of specific lecturer experiences thus contributing to the desired quality responses. The purpose of this research was to generate new understandings of the dynamics of critical thinking arising from reading literature and empirical research. It was not intended to test hypotheses (Sandelowski, 1986).

A case study is an anti-positivist approach to research which seeks to co-construct the mental atmosphere, feelings, motivations and verbalised thoughts (Stake, 1995) of the participants about the phenomenon, rather than to draw those into quantitative symbols and tables, which Krefting (1991) views as incongruous with the purpose of a qualitative study. I concur with Yin (2014) that case studies can capture everyday situations and processes of theoretical interest. Case study is a methodology that affords the reader a view of a process and phenomenon and the design of appropriate methods through which to generate and construct information about the concepts and enactment of critical thinking. The researcher-participant interactions and communications in the case study sought to understand (Rapley, 2008) rather than to predict and control (Clandinin, 2007; Krefting, 1991) thus moving towards the qualitative and interpretivist ideals for research. Case studies catch the close-up reality and 'thick description' (Geertz, as cited in Cohen et al., 2011, p. 290) which best serves report-writing per participant that is drawn from multiple methods in this study.

Yin (2014) reminds the researcher of the distinction drawn between the context of the study, which is a real situation, and the phenomenon, which is abstract, thus, enabling an understanding of the factors influencing the participants (Cohen et al, , 2011). Questionnaires, observation or semi-structured interviews that encouraged extended discussion and written reports were drawn on. Yin (2004, p. xiv) holds that "the 'case' is a real-life set of events for which data will be drawn". The lecturers (who were a case group bound by their commonality of being lecturers of pre-service teachers) were instrumental in exploring the constructions and enactment of critical thinking. Yin (2004, p. xiv) opines that "The 'case study' is comprised of the research inquiry, questions, theoretical perspectives, empirical findings, interpretation and conclusion." The empirical tasks and their renderings are thus separated but essentially integrated and relational – the foundational constructs of assemblages.

This study was conducted at a single case study site: a pre-service teacher education institution (see 1.5.1). Initially, six participants participated in the research; later the data of four participants served as the sub-units of analysis (as termed by Yin, 1989, as cited in Verschuren, 2003). Data concerning critical thinking were gathered from various quarters, at various levels and through various methods for each sub-unit. I proceed to relate how the case study, in its entirety, was constructed and conducted. The first step was to determine the participant group to be able to find data-rich samples.

4.4 The sampling procedure

I used a purposive sampling approach to this study (Rule & John, 2011). Mitchell (as cited in David, 2006) holds that participants are not samples but rather actors and that equal weighting must be given to both the actors and the institution in which they operate. The rationale for constituting a participant group using non-probability purposive sampling is explained hereunder.

4.4.1 The inclusion process used to select participants

Verschuren (2003) insists that the cases be selected in the same way that participants are selected: based on identified criteria. This section explains a non-probability purposive sampling approach, why it was preferable and how it was used. I acknowledge that this form of sampling does not afford everyone an equal chance of participation; examples of this are given in the next sections (see 4.4.2 and 4.4.3). The role of non-probability purposive sampling in this study required lecturers to provide data related to critical thinking. Guidance to select participants was based on the questions and information formulated from the temporary lens developed in Chapter Two. The lecturers had to meet specific criteria to be able to offer commentary on critical thinking theoretical and praxis, views. Participants were needed who could respond to matters assigned as national, institutional and individual significance in the construction of critical thinking. Their insights into their own relationship between knowledge and CT were sought.

The disadvantage of this form of sampling is that it does not account for sampling bias on the part of the researcher. However, I sought to counter my bias by scrutinising the institutional database to identify a wide variety of traits among the potential participants so that their individual and combined contributions might assist in exploring critical thinking. The database offered information in categories set to identify the traits (See Appendix C). I noted well the

comment of Creswell & Plano-Clark (2011), that the selection of such participants does not guarantee rich data. It was necessary to select participants carefully to construct data-rich cases that would impart relevant information (Palinkas et al., 2013).

4.4.2 The institution

The study was conducted in a single, independent, pre-service teacher higher education institution (HEI) in Ethekwini, South Africa. English is the "lingua franca" (Brenzinger, 2017, p. 49), of the region and the language of learning and teaching (LoLT). Teaching in English is a common feature of higher education in developing countries (Altbach, 2010). This may be a factor in communication about CT because as the framework suggests, within disciplines, and within an institution, and within individuals. Language carries symbolism at a conceptual level and in the conveyance of thought about understanding, for example, constructions of critical thinking. The research was conducted in this institution because it was willing to cooperate, the research proposal was well-received and support of research was evident. The multicultural nature of staff and students in the institution was also of value in pursuing ideas about where, when and how CT is constructed as advanced by the lens for this study which avers that the biography (age, race, gender, schooling, religion, language) are powerful forces that can shape educational experiences.

The location of this study was of particular interest because the lecturer complement was comprised of both mature people and millennials, some of whom were the "first-generation" of people in their families to obtain higher education qualifications (Heymann & Carolissen, 2011, p. 1379). The programmatic aspect of the FMTD lens advances the possibility of the influence of past and present schooling and academic experience in an evolving SA education system being formative on CT. The permutations of lecturer characteristics are valuable, and those factors may play a role in how CT is constructed. The ensuing section presents how lecturers were selected for the study.

4.4.3 Institutional database

I gained authorised access to a portion of the personnel database of all staff members in the identified institution. Names, surnames, titles, designation of roles, highest qualification and other qualifications were shown (data were also accessible on the institution's staff webpage but that was not fully updated at the time of the research). A total of 38 lecturers were shown on the institutional database (see Table 2).

Table 2

Distribution of lecturers – male and female across age ranges – identified from the database

Age Range	20-29	30-39	40-49	50-59	60-69	Percentage of males and females
Male	3		3			6/38 = 16%
Female	4	11	3	12	2	32/38 = 84%
Total	7	11	6	12	2	38 = 100%

This exploratory research identified 38 academics as potential participants; 32 females and 6 males as can be seen in Table 2. "In South Africa in 2013, 47.8% of academic staff in public universities was female (CHE, 2015)" (Subbaye & Vithal, 2017, p. 926). My data collection site had a higher percentage of female lecturers as a result of it being an institution where pre-service teachers are educated only in Foundation Phase and Intermediate Phase degree programmes with other qualifications having being accredited but not yet instituted. In South Africa, these phases of education have a high representation of females (see 1.5.2) (Bhana & Moosa, 2016). The participants lectured across a range of disciplines. When the lens for this study is held to the selection of participants, the biographical force suggests that gender, age, culture and language have the potential to shape CT because those factors determine the quality of education available at that point in the education trajectory of change (historical time being an important factor in changes in SA education).

I choose to describe the participants as representative of the diverse 'ethnicity' in South Africa, rather than assign one of the four 'race' groups typically referred to in South Africa. The assigning of a race group is an enduring convention from the apartheid era. Ethnic groups within race groups were aggregated into specific regions of SA. There were many ethnic groups to take account of but these were grouped as the state saw fit to do in the provision for education. Combined, the provision of education both on the level of race and ethnic group would have most likely resulted in different experiences of education and perhaps of CT also.

I selected participants from a variety of ethnicities and language groups, unequally distributed between males and females of different age ranges because these characteristics may have provided different experiences of education resulting from the apartheid education system language policy alterations over time. In the pre-1994 era the state prescribed the languages of

teaching and learning per race and ethnic group (Samuel, 2008), thus participants were selected from a range of language groups based on the biographical questionnaire responses. The possibility of gender being influential in the experiences of the lectures is offered in Chapter (1.5.2). All of the participants held a Master's degree qualification (South African National Qualifications Framework Level 9 (SAQA, 2012). The significance of the qualification was that in the National Qualification Framework (NQF) (SAQA, 2012), the first of the national education level descriptors which indicates an explicit requirement to engage in critical thinking, is Level 7. The institutional database indicated that all the participants had attained a Master's degree (Level 9) obtained after the NQF Level Descriptors (SAQA, 2012) were introduced. According to the national documents mandate for CT, therefore, participants should have been exposed to CT in their own studies. One of the participants had registered for a PhD but was not yet qualified when the selection was made.

4.4.4 A potential group of participants to approach

I was guided by the above suggestions arising from the theoretical lens to approach eight lecturers from a field of 38. The selection of 8 lecturers was based on the intention to capture a specific permutation of race, class, age, gender, language, educational context and other selection criteria in participants for the study. The permutation indicated that 8 participants would suffice. Eight participants would represent the factors that were identified with the help of the theoretical lens and there would be sufficient time to explore the critical questions thoroughly with each participant. A further rationale for selecting a relatively small participant group resulted from a limited timeframe in which to conduct research (3 academic semesters). Stake (1995) indicates that time constraints might emerge in such fieldwork, therefore, the manageability of the research project is an important consideration and limiting participant numbers is a strategic decision for the researcher. The methodological construction for research in this instance sought depth and richness of data in each of the participant's data. s.

Table 2 indicates the group of lecturers from which I could draw. (I have avoided assigning male or female to the discipline and year group, as this might make it possible to identify the individuals, given that the institution has a small lecturer complement.)

The table below shows a range of modules that participants taught, and the year group that they taught in the undergraduate programmes.

Table 3

Module, and year of study, taught by potential lecturers

Discipline	Student Year
home language	2nd
social sciences	4th
professional studies	4th
performing arts	2nd, 3rd
professional studies	1st
mathematics and technologies	1st
social sciences	1st, 2nd
social sciences	1st, 2nd, 3rd

4.4.4.1 Approaching participants

The final group ideally contained a cross-section of persons who were interested, available and might reasonably have been expected to have some knowledge of critical thinking that they could share on account of the fact that they held Masters' degree qualifications that were mandated to include CT. I could not be sure if they had. Lecturers who I believed might be willing to share their views of critical thinking were selected, although I could not be absolutely certain that this would be the case. Creswell and Plano-Clark (2011) posit is a particularly strong feature of a sampling decision. Based on the facts (established from the biographical questionnaire) (see Table 2) the above points were taken into account for selecting participants. A cross-section of modules and year groups was selected to add further depth to the study.

4.4.4.2 Approaching all identified participants at the start

Before I could begin to approach the selected participants, ethical clearance was sought. The approval was delayed for some months in the institutional offices. By then, the academic semester was drawing to a close and there was little time left to approach lecturers. There were insufficient male lecturers to represent the participants by gender and age group equally. In short, it was not possible to select the participants according to the envisaged permutated plan that I mentioned earlier. In the remaining time, I approached two lecturers among the eight

possible participants (see Table 2). They immediately agreed to participate. We arranged appointments for the initial explanation of the research. I explained the purpose of the research and how and what I would be looking at in the observation and the process of recording and writing field notes. I explained that I wanted to establish what points in the lecture might constitute 'critical enactments' that we could discuss in a semi-structured interview. Wragg (2011, p. 65) points out that in the observation one looks for salient aspects of a lecture but what that was precisely was the purpose of the observation. I also made it clear that I would observe but not participate in the lectures. I explained the process of recording and providing DVD video copies of the observations for private viewing. This was when I explained that following the private viewing, we would meet for an individual semi-structured interview. The participants were given the opportunity to ask questions. Wragg (2011) advises that this is a suitable procedure to follow. The signing of informed consent documents and the distribution of the biographical questionnaire took place during this meeting. The meetings took place separately. Each participant received a questionnaire. The biographical questionnaire elicited biographical data, academic, professional and current research engagement data (see Appendix C). This also served to corroborate the data I had obtained from the institutional database.

In the new semester, one of the eight possible participants declined, and another was moved into a management position where no lecturing was involved. Thus, six participants were still to be approached. Four willingly agreed to participate which presented a total of four participants. Later two more participants indicated that they were willing to participate. Fortunately, no one withdrew from the study. I met with the participants to introduce the topic, explain the purpose of the research and the process to be used, and secure their informed consent. Table 4 presents a summary of the six participants' disciplines.

Table 4

Module, year of study, highest qualification, age range (now 6 participants)

Discipline in which the lecturer lectured	Student Year	Programme in which the lecturer lectured	Highest qualification	Age range
home language	2nd	Intermediate Phase	Master's	20 - 29
social sciences	4th	Foundation Phase	Master's	20 - 29

professional studies	4th	Foundation Phase	Master's	50 - 59
performing arts	2nd	Intermediate Phase	Master's	30 - 39
science and mathematics	1st	Intermediate Phase	Master's	20 - 29
social sciences	3rd	Intermediate Phase	Master's	30 - 39

I ensured the participants' anonymity by assigning a pseudonym to each: Sheldon, Ali, Gugu, Tina, Mike and Linda and they kept me company throughout the doctoral journey. These individuals were selected because they agreed to engage in research about critical thinking (CT) and it was, therefore, assumed that they had something to offer in this regard. My approach remained explorative.

4.5 Data production

The next section covers the data production process which employed a series of methods. I have discussed the methods in the order in which they occurred to give the reader a sense of how the empirical work flowed.

4.5.1 Methods

I used multiple methods to create a data corpus (Braun & Clarke, 2021). These are listed hereunder.

- document analysis of national curriculum and policy documents
- document analysis of institutional curriculum documents
- individual biographical questionnaire – to generate data about each lecturer
- lecture observation – to view and video each lecturer in action
- individual semi-structured interview – to capture discussions and generate data per lecturer
- field notes – per lecturer to expand thinking from observation (Krefting, 1991; Lofland, 2006)

The foregoing combination was intended to increase the rigour of the research (Denzin & Lincoln, 2018; Krefting, 1991). Braun and Clarke (2006, p. 79) term the items listed above as the "data corpus", while the individual groups of items are referred to as the "data set". A "data

item" is one biographical questionnaire or one semi-structured interview. In particular, I wanted to foreground the participants' constructions of CT and the reasons for viewing their actions as CT using the lens of currere and the FMTD. My careful consideration and declaration of such focus were central to the overall framework for the study. The maintenance of a framework adds to the *credibility* of the study (Krefting, 1991; Rule & John, 2011).

The techniques utilised for data generation are nested in the case study design (Yin, 2014). Yin (2014) explains that the judicious design of the data collection methods yields evidence that provides an understanding of the phenomenon under investigation. In keeping with the study's framework, the method designs were guided by research questions which emerged from Chapter Three. I adjusted the components of the methods slightly as the fieldwork progressed.

However, one section of the data collection methods I employed, analysed and reported on prior to beginning engagement with the lecturers in the field. It was the document analysis of national policy and curriculum documents pertaining to CT. Informed by the historical force of the FMTD, I needed to establish the specific details of the national mandate for CT to understand clearly the national-level requirements pressing in on lecturers. This needed to be done before progressing with the discussion of other aspects of CT seen through the lens of the FMTD. (see Chapter Two for the data report from document analysis).

4.5.2 Document analysis

Document analysis complements a case study and allows the researcher to search through key documents for relevant information (Bowen, 2009; Rapley, 2008). Documents are held to be "social facts" that are produced, shared and used in socially organised ways (Atkinson & Coffey, 1996, p. 47). Some of the documents analysed in this study were accessible online in the public domain so permission to use the documents was not necessary; others were found online in closed sites. They were viewed as raw data from which one makes sense (Bowen, 2009). Document analysis is a process of "finding, selecting, appraising and synthesising data" (p. 28). Bowen (2009) pertinently suggests that one should distinguish between the uses of data. For example, two sets of documents were analysed in this study. a) CT in education (to establish the intended curriculum requirements for CT). They formed part of my understanding about CT in the SA context and were thus analysed and reported on in Chapter Two. b) CT at the institutional and individual level as recorded in institutional documents (see Table 5). The findings that emanated from the document analysis (and their stated requirements) were to ascertain how the lecturers have incorporated these into their institutional-level planning and

enactment of CT. The document analysis data were used to verify data gleaned through other methods, thus adding credibility to the data and rigour to the research process – essential qualities in qualitative research (Krefting, 1991). Both methods are described below, although the analyses were carried out about two months apart.

4.5.2.1 Document analysis of national curriculum and policy documents – critical thinking

National curriculum and policy documents were searched for references to CT on the suggestion that the forces of national and institutional significance orbit the individual who is charged with responsibility of CT. The 'crit' root word and its derivatives in the national curriculum and policy documents were found using the 'find' command in (.docx) files, and the 'search' command in .pdf files respectively. A wide variety of documents was included for analysis and, on the insistence of the authors, had to be read as a cluster or inter alia (South African Qualifications Authority, 2013). The task of reading through the documents was beneficial in integrating meaning across the documents.

A document analysis process was used which involved a manual process of scanning and then closer reading, followed by recording how and where (contextually) the term 'crit' was used in each document. The data extracts which mentioned critical thinking, per document (data item), were captured and placed in a summary with the heading 'details of publication' and 'notes' where the purpose of the document and the occurrence of the derivatives of the root term 'crit' were recorded in context. See (Appendix B (i) and Appendix B (ii)) for the full report and discussion of the findings.

Initially, I established references to 'critical thinking', 'critically evaluate' and 'use … critically' in documents produced by the Council on Higher Education (2013b); the Council on Higher Education (2004); the Directorate: Registration and Recognition (2012); the South African Qualifications Authority (2000) and the Department of Higher Education and Training (2015) (see Appendix B (i) and Appendix B (ii)). At first, I imagined that document analysis was not suitable for this set of documents, as the documents were easily searched by using elementary electronic search tools. It soon became apparent that it was the sense of meaning that was required, not simply the terms or quotes in isolation (Strauss & Corbin, 1990).

4.5.2.2 Document analysis of institutional documents – critical thinking

The institutional learning plans (declared curriculum) registered with the Council on Higher Education that were used in the participants' lectures were similarly analysed to identify the

declared (espoused) goals of education with regard to lecturing pre-service teachers and how they were presented in institutional documents. I employed an analysis technique in which colour and codes are applied to words, phrases and themes, as suggested by Bowen (2009).

The institutional documentation for each of the modules included in the study was searched to detect the presence of the terminology 'crit' and its derivatives. The simple 'find' command in Microsoft Word was sufficient to accomplish the task in Word documents. The 'search' command in Adobe Acrobat Reader was used for files that were stored as portable download files (pdf). A search of these documents revealed the espoused CT intentions of the lecturers who had constructed the documents, per module, in relation to critical thinking. It was interesting to see how this term appeared across the study letter of each module; in other words, if the purpose of the module matched the intended outcomes, assessment standards and rubrics for assessment (constructive alignment) as a means of determining where it is used more or less frequently and what it is expressed in relation to (see Table 5).

4.6 Entering the field

Preparation for entry to the field and actions during the fieldwork phase of the research (planned and unplanned dilemmas and insights that fieldwork renders in practice) are explained here.

4.6.1 First meeting with the participants

The initial meetings with the candidates identified in the sampling process were brief. I made contact and asked if there was interest in the topic under investigation, namely P-STE lecturers' constructions and enactment of critical thinking. This was met with interest and enthusiasm by all but one of the potential participants. I ensured them that their identities would be protected and that all conversations and meetings would take place out of sight and earshot of other people, and I made appointments for the second meeting.

4.6.2 Second meeting with the participants

The second meeting was to re-introduce the research topic, purpose and focus, scope, commitment, expectations, informed consent (see Appendix D), the ethical use of the data and to secure a date to observe a lecture. I positioned myself in relation to the phenomenon and my intention as a researcher/non-participant. The purpose and extent of the interaction were described to the participants as an exploration of the meanings of critical thinking. The entire research process relied on building trust with the participants because I suspected that my being

a colleague and researcher might taint the interactions. I was ambivalent about my position as an insider and wondered if it was of some benefit because of the trust relationship I had built with my colleagues. However, it was also possible that my position in the institution might influence the responses - I would never know the extent of that influence. Krefting (1991) points out that the proximity and duration of the relationship with the participants can undermine the study's credibility. I had to negotiate those waters consciously, which involved the engagement of a strong *reflexive* process as advocated by Braun & Clarke (2021). I emphasised that my role was not to measure if the official versions of following national and institutional documents were present in practice but rather to gain insight into how the lecturers interpreted what they believed to be critical thinking as a concept and as word and practice. The intention, I explained, was an exploration of their constructions of critical thinking. In such a situation it is difficult to give any guarantee about what information might come to light. It was in this situation that the delicate nature of empirical findings was revealed. I explained the process that would be followed and that I thought the lecture observation and semi-structured interview were most appropriate in allowing us to see, hear and speak about CT.

It was a challenge to find a suitable time in the lecturing schedules that could accommodate observation. Glaser and Strauss (2008) imply that such constraints might arise. When the lecturers could not be observed immediately, I maintained contact to encourage their continued interest. The observations occurred over 18 months.

The participants and I spoke about what the students would be told when I appeared in their lecture. We agreed that I would say that I was observing the critical thinking aspect of the lecture and that if any of their 'voices' were quoted, I would seek their consent to publish or present. The conversation then turned to the lecture observation itself – which would occur only by appointment. I assured them there would be video and audio recorders only and that the camera would be trained on the lecturer alone. The consent form was explained as being indicative of their freedom to consent and the right to withdraw without consequence (see Appendix D). The lecturers completed the consent form and signed it voluntarily. The biographical questionnaire was issued at this point, and the lecturers were able to complete and return it at their leisure. As the weeks passed, I kept in touch with each participant and confirmed the date for a lecture observation and recording.

I reiterated that we would engage in semi-structured interviews to discuss the recorded lecture observations and that these interviews would also be video and audio-recorded. Within days of

the observation, each lecturer was to be provided with a recording of the audio and video of the lecture on a DVD. It was agreed that we would view the video independently of one another and use the slide counter on the video as a reference for the points that were considered to be critical thinking enactment. The recordings were to be used in the semi-structured interview.

4.6.2.1 Biographical questionnaire

The biographical questionnaire was designed to gain a better understanding of each participant. It was not a method but rather a means of collecting information. Initially, I thought I would compile the list of each participant's qualifications myself; instead, each participant was asked to complete a biographical questionnaire and I would confirm and expand the information concerning each participant against the institutional records. The questionnaire contained closed questions which required the respondents to indicate biographical details about themselves. Some questions were binary YES/NO items and two contained a set of symbols which indicated 'understand, read, write, speak' (U/R/W/S) in response to questions about language experience and proficiency (Willis, 2018). The questions were fixed and not too intrusive or sensitive because they were related almost entirely to the questions asked of an academic in the workplace, for example schooling, academic and professional qualifications and teaching and lecturing experience. (see Appendix C). No changes were made to the questionnaire once it was finalised.

The questionnaire was self-designed and produced and distributed as an email attachment which could be returned in electronic or printed format; an advantage of questionnaires (Fife-Schaw, 1995). Collecting the completed questionnaires proved to be difficult and in retrospect, I should have created a document with smaller response text boxes so that the task of completing it would appear less lengthy and daunting for busy people. The data items were used collectively to form an overall view of the individuals rather than analysing the data. Fife-Schaw (1995) indicates that the purpose of the questionnaire should be clear and without a hidden agenda.

4.6.3 Third meeting with the participants and lecture observation

This was the most difficult section of the fieldwork as it involved time, and time is scarce in busy, HE settings. I had intended to observe two of each of the participants' lectures but that proved to be too ambitious. I dispensed with that notion early in the planning because of the considerable complexity of observation from logistical and methodological perspectives.

In preparation for observing a lecture, I knew from my Master's research that it would be appropriate to ameliorate my presence and any influence that I might have on the data; a consideration marked by Verschuren (2003). One might argue that this is a futile exercise. Bratich (2018) suggests the naïvety of a researcher who believes that one can simply observe; it applies to the presence of the camera which is simply recording, but he holds that it is not possible to simply observe without being observed nor to simply record without being observed. Nevertheless, I intended to install a video camera in the lecture venues prior to my visit to create a 'wallpaper' effect. The intention was to de-sensitise students and lecturers to its presence; this happened only once, as time and equipment safety did not always allow me to carry out that task. Having not been able to do that effectively, I turned my thoughts to other considerations.

The video and audio recordings were for overt data collection in a natural setting and the video offered "a more 'unfiltered' observational record than human observation" (Simpson & Tuson, 2003, p. 51). The lecture observation recording was an opportunity for the participant to view the lecture and it allowed me to gauge if the 'writing' about (CT declarations in institutional documents), the 'saying' (in interviews) and the 'doing' (enacted CT) were aligned (verification process). I was able to observe the atmosphere, interactions, non-verbal interactions, and the lecture's structure and pace, all of which Verschuren (2003, p. 131) advocates as necessary to overcome "tunnel vision" on the part of the observer. All of the above points informed my decision to employ both observation and semi-structured interviews to gain a more complete picture of what was being observed. It also sharpened my thoughts about being present and as unintrusive as possible.

I was thus able to explore the theory and practice of CT from more than one perspective. Bertaux and Thompson (1996) cited in Verschuren (2003, p. 128) state that it is problematic to work on:

> One single point in time, detached from physical, social and political context; without taking into account its relations with other objects in the case; without looking at the functions it fulfils for the larger whole (i.e. case) of which it is a part.

I do not claim that I saw (or heard) all that a lecturer had to offer in the space of one lecture, however, I had no more time for fieldwork, but I attempted to sharpen my own wits in observation and interviews by considering more about the senses I would be using.

4.6.3.1 The role of senses in this study

The use of senses in the case study is explained further because observation engages seeing, but also hearing. A pause in explaining the procedure is required, to share an epistemological glance at observation as it was used in this research. Bratich (2018, p. 526), who writes about 'observation' in qualitative studies, distinguishes between 'observation' and 'vision', 'sight', 'theory' and 'view', while Eisner (1991) speaks of 'enlightenment', all of which are forms of ocular-centricism that have existed since the commencement of formal education and study thereof. Bratich (2018) claims that it is impossible to simply sit and observe with the assumption that reality is arrested and that one can just look and record. On account of reading about observation, I had to consciously consider my original position as a non-participant observer in the lecture room when I initially thought of seeing in its most naïve form. Weber's (1947) sociologically constructed action theory constructed in sociology "puts forward the notion that subjective meanings attached to events by individuals are inseparable from social structure" which points to the complicated process of observing classroom activity (cited in Wragg, 2011, p. 53).

Furthermore, I recognised my presence in the lecture room as a means to bring what I 'heard' into context, but I was 'witnessing' rather than simply observing or looking. Witnessing was the very reason for my presence in the room. My observation in person differed from the purpose of the camera at another location in the room or the voice recorder at the front of the room, which were simply recording.

Although I observed lectures and recorded field notes, I was more than an observer (see 3.6.3.1) "Where observation is concerned chance favours only the prepared mind" (Oxford Dictionary of Quotations, 1979, p. 369). Thinking I was well prepared did not mean things would not go awry. I had intended to employ speech-to-text field notes to immediately make notes about my thoughts about what had transpired, a practice advocated by Lofland (1971) that constitutes my notion of critical thinking and highlights the enactment of critical thinking that I think are evident in the lectures. However, I had to be satisfied with video and audio recordings, accompanied by well-written field notes and memos. Where I had hoped to use the speech-to-text feature of an audio recorder, I found it works best in a quiet, single-voice environment rather than in a lecture room where many voices can be heard. It was important to make field notes immediately so that I did not have to rely on memory (Shaughnessy, Zechmeister & Zechmeister, 2003; Stake, 1995). This was challenging, as I needed to watch and listen to the

lecturer and students as closely as possible. The field notes, therefore, were not as detailed as I would have liked but that was not necessarily a setback, as it is important to observe and listen (Corbin & Strauss, 2015).

As I was observing and identifying the CT enactments in the lectures, I realised that I had not put sufficient thought into what I was looking for or at. I can report that I had read about CT prior to the observations and I had analysed relevant documents; I was observing to 'understand' (*verstehen*) as described by Max Weber (1947), in as many ways as possible, as much as I could, about many aspects of critical thinking. The understanding would enable me to report "both the way in which a particular act is understood and the explanation that goes with it" (Wragg, 2011, p. 55). I did not make use of recording schedules or timing in the observation. Rather, I made field notes of what the students were doing in relation to what the lecturer was doing and the interaction. I was viewing salient 'critical events', as explained by (Willis, 2018), but I did not write about the outcome of the event, as suggested. Instead, my notes of what I thought were enactments of CT were reminders for discussion in the semi-structured interview video viewing. I had purposely refrained from defining what enactments of CT were. It was an attempt to allow as much scope as possible for lecturers to identify whatever they considered to be enactments of CT.

I was constantly questioning myself about what I was observing and since the possibilities revealed themselves thick and fast, there were times when I made hurried field notes and elected to focus on observation and listening (Wragg, 2011). I realised I would have to rely heavily on data emerging from the audio and video footage and I was glad to have had the equipment in place to capture the lecture. The use of video recordings allows for repeated viewing and which enhances analysis (Merriam & Tisdell, 2016). The value of observation, for the participants under observation, was that they had an opportunity to utilise their observational power and surveillance analysis when they viewed the video recording of their lecture. I found this satisfying because it was a benefit that this research design aimed to achieve.

4.6.3.2 Dealing with my positionality

Angrosino and Rosenberg (as cited in Denzin & Lincoln (2018)) posit that the distance between object and researcher must be discerned in terms of foreground, background, self and other. Denzin and Lincoln (2018) indicate that social class, race, gender and sexual orientation influence researchers' observations and that their judgements are not necessarily moral but can

amount to researcher prejudice or bias. This was reason to pause and realise that my intention to be unobtrusive in the lecture room was not only impossible but that I would also influence the observation by virtue of my race and gender, and indeed, the white middle-income social class and bilingual language proficiency I declared as my positionality (see Chapter One).

Observation of one point and not another indicates a preference alongside the influence of my identity and this would make detachment impossible (Vidich & Lyman, as cited in Denzin & Lincoln, 2018, p. 527). Bratich (2018) concluded that seeing is an active process of defining, circumscribing and excluding.

Angrosino and Rosenberg (as cited in Denzin & Lincoln, 2018) discuss how the observation process is granted and facilitated by the participants. Indeed, it was the participants who granted the permission, rather than the institution in which I conducted the research, so empowering the participants to reflect on the research phenomenon was brought about by means of participant generosity of knowledge about critical thinking. That idea made me think of research for the people by the people, which would require that as a researcher, I could shift as much as possible from being the omniscient scribe of the lecturer's data to becoming a thinker and communicator with participants as we navigated along the lines between concrete items and their various arrangements. The latter are features and thinking associated with the understandings of assemblage and thus help a qualitative approach which seeks truth, value and authenticity. I chose to interpret my findings using thematic analysis and I produced a report per participant.

As I stated previously, I had a presence, the effect of which was going to influence proceedings whether I liked it or not. Informed by the theories, I tried to ensure that my ocular gaze was directed at two specific aspects of the lecture; the constructions and enactments of critical thinking with a view to gathering more than that in context.

4.6.3.3 The lecture observations

My reflections on the form and shape of the lecture are detailed below provide a backdrop to the reflective comments about critical thinking made in their interviews.

I attended one lecture per participant.

- I observed two social sciences, one mathematics, one professional studies, one performing arts, and one language methodology lecture.
- The lectures were intended to be of equal duration (90 minutes).
- With permission from each participant lecturer, I explained the purpose of my presence in the lecture venue to the students (I was there to observe an aspect of teaching and learning, CT, with the lecturer as the focus).
- The audio recorder was placed on a table surface close to the lecturer.
- The video camera was placed at the halfway point of the room or at the back, next to the researcher, and it was focused on the lecturer.

I sat in an empty seat near the back of the venue where possible. A brief description of each of the lectures follows – they are merely short descriptions of each lecture, which introduce the reader to the scene in the lecture room, and they note what I was doing in the observed lecture in my efforts to glean authentic data about critical thinking enactments.

A week after the observations I supplied each of the participants (Sheldon, Ali, Gugu, Tina, Mike and Linda) with their video and audio recordings on DVD. I reiterated the task of identifying enactments of critical thinking using the slide counter on the playback device. In the meanwhile, I viewed the recording and added points to my field notes to complete my observation. It was to be part of a reflexive process that Braun and Clarke (2006) and Krefting (1991) advocate for thematic analysis.

By overlapping the observations and interviews, I could begin to see how the phenomenon was presenting itself in the lecturers' explanations. I was comfortable with this arrangement as it was an opportunity to adjust some probing questions in small but necessary ways. I would then be able to maximise the time in the field and the data analysis process.

As the interviews continued, those participants with whom I had completed observations, I continued to provide with video and audio copies (DVD) of their lectures to view independently. They were required only to note the position of the enactments of critical thinking using the slide counter on the video footage. (This facilitated the review process of the tapes and video recordings, as discussed below.)

4.7 Field notes and memos

I took notes in the field which were helpful and a feature of qualitative research (Lofland, 2006). The notes were not cast in stone but rather a means to alter the course by re-arranging or adding prompts that might elicit additional data from the participants in the interviews. Parlett and Hamilton (as cited in Stake, 1995) termed that practice and possibility, a progressive focus. Byrne (2021) and Krefting (1991) suggest that they are advantageous – an iterative process in semi-structured interview questioning which allows the researcher some leeway to detect if the participant is providing preferred social responses instead of speaking from experience. I could not take extensive notes during the interviews, as that would have smothered the discussion (Byrne, 2021). Instead, I jotted down points to expand the field notes as soon after the interview as possible and during subsequent viewings, I took note of what had taken place and what might be a barrier to understanding by both the participants and myself and made adjustments.

According to Lincoln and Guba (1985), field notes have foci – in my work, there were four. The first was on the selection and process of securing the participants; the second was on how the process of engaging them progressed; the third was taking notes during each lecture (observational notes) (Lofland, 2006), and the fourth was on expanding the notes I had made previously by returning to the audio and video recordings of the lectures and interviews; better identified as memos rather than notes (Corbin & Strauss, 2015). The process allowed me to cross-check my first notes and remind myself of the details of the events because several months elapsed between data collection and analysis. I added a fifth unplanned set of memos which were in the form of audio recordings (later transformed into electronic text) in which I verbalised my thoughts about dilemmas, understandings, interpretations and other observations. Braun and Clarke (2021) note that this forms a part of data analysis because it is the beginning of organising data in preparation for analysis. Patton (2002) indicates even analytical insights must be included so as not to lose them. Field notes help to capture some of the dense descriptions that can assist in the transferability of procedures and methods to other situations and populations (Lincoln & Guba, 1985).

4.8 The fourth meeting with the participants - Semi-structured interviews

The fourth meeting (by appointment with each participant) was a semi-structured interview. Utilising semi-structured interviews with prompts created opportunities for open-ended

responses and my participation in the discussion. The semi-structured interviews were intended to be an opportunity to discuss the constructions of critical thinking in depth with the emphasis on using fieldwork and interviews "to see the concrete situation and informants in person" (Glaser & Strauss 2008, p. 162).

By the time of the interview, the participant and researcher were to have marked enactments of CT on the video slide counter. With the prior consent of the participant, the interview was captured on video and an audio recording was made. The discussion centred on the three key open-ended questions.

1. What is your construction of CT/ or what do you think CT is?
2. What do you think were the enactments of CT in your lecture?
3. Why do you say those were enactments of CT?

When first preparing for the fieldwork, I made the decision not to share my thoughts concerning CT. I was glad of that decision because it meant that I did not alert the participants to what I had discovered about critical thinking and, therefore, did not influence what they shared with me, as could have happened (Glaser & Strauss, 2008). I also avoided appearing intimidating with the knowledge I had gained from my reading about critical thinking. I assumed a naïve position even though I had begun reading about critical thinking, as Kvale (1996) suggests one should do in preparation for interviewing a participant. I am unsure of how the interview discussion would have progressed if I had revealed more about CT in the opening statements. Following an idea suggested by Yin (2014), I decided on the mental line of inquiry which I had formulated in my head (this was the form of analytical framing described above which I had garnered from reading). I also had a verbal line of inquiry which I made known only when I engaged with the participants. The verbal line was expressed in the form of critical questions.

I was prepared for the fact that not all interviews are good and that the process provides clues for improvement and refinement. Previous experience in Master's research prepared me for how participants can use interviews as they deem fit. Being alert and using three key questions in the interviews was a strategy to keep the interview on track. I utilised a strategy suggested by Kvale (1996); the questions were used uniformly in all the interviews. The purpose of the interviews was to discuss what was perceived to be CT. The most challenging part of the interview was to ask why the lecturers viewed those enactments as critical thinking. In some instances, I had to rephrase the 'why' questions as 'what' factors or 'in what way' critical

thinking was constructed. Becker (as cited in Yin, 2014, p. 110) noted that this could be a way of softening the impact of a 'why' question, which can be intimidating. Rephrasing was a form of probing for information rather than prompting. Probing has the effect of furthering responses (Willis, 2018) while avoiding leading or asking loaded questions in an interview. However, in some instances, I saw the need to prompt the participants because on occasions they did not seem to be able to offer responses even though I waited patiently (Kvale, 1996). I also asked for clarity concerning issues by asking if I had heard one or another point correctly. There is a fine distinction between probing and prompting and I had to guard against crossing the line between the two. After the first interview, it became easier to re-phrase the questions when I realised that the participant was unsure of the direction they should take.

Contrary to Stake's (1995) advice that the end of the day was not ideal for conducting interviews, the interviews could only be conducted at that time, which meant that there was not always time to reflect deeply enough on the conversation as we were all tired. A challenge of conducting interviews and observations is that one's attention is not always of equal quality, so looking and listening carefully and giving one's full attention is challenging. I had to make use of video and audio recordings so that I could spend time listening and engaging in conversation (Yin, 2014) while the lecture observation was in progress. During the interview, I tried to ameliorate the lapses of attention to seeing, listening and reflecting by making key word entries as field notes to remind me of points to expand upon in my memos. The data that was collected in the interviews would be taken from the discussion of the lecture observation on DVD recordings.

4.8.1 Discussion of video footage of the lecture observation during the semi-structured interview

In terms of my position as an observer of teaching and learning who was not usually present in colleagues' lectures, I was grateful that the participants agreed to be interviewed, despite knowing that the questions might result in them feeling vulnerable about their knowledge of CT. The lecturers had viewed their video and/or listened to the audio recording in private, and I had conducted my exercise of marking enactments of critical thinking using the video slide counter. I added to my field notes to determine where I considered critical thinking enactments to have occurred before the interviews commenced. Despite a considerable amount of reading about the subject, my ideas about the constructions and enactment of critical thinking were not well developed at that point. It was surprising how differently the participants approached the content of the interview. It is easy for a researcher to enter the field with preconceived ideas

about what would be found. For this reason, I took caution from Zimbardo (2007) who warns researchers to be conscious of selective attention, the reactivity of persons in the room, and my attention deficit to the frequency or significance of events and expectancy effects on my part. From Shaughnessy, Zechmeister and Zechmeister (2003) I noted that I should be aware to avoid selective data entries.

In retrospect, I see this as advantageous, as I was more receptive to how they manifested. Braun and Clarke (2006) discuss the merits of the researcher having read widely or less widely and conclude that the result can perhaps blind the researcher to new insights or assist with a nuanced interpretation of data shared by participants. The videos of the lecture observations were catalysts for the semi-structured interviews in which I posed the key questions indicated earlier (see 3.0). It was my opinion that one of the participants had not viewed the DVD prior to being interviewed and another had mislaid the DVD, so we needed to move through the recordings slowly during their interviews. I planned that each semi-structured interview should last approximately 90 minutes but each interview took at least two hours, probably more time than any of us had set aside for the discussion. The participants were willing to continue past the agreed time; interviews proceeded, and I considered them to be fruitful. I asked all the questions at once at the beginning of the interview and then returned to each one when necessary. I saw the participant lecturers 'lighting up' when they identified enactments of critical thinking in their lectures where perhaps they had not thought they would find any. By posing questions, I clarified a few points to keep the conversation going. The open discussion meant that the transcript was not neatly compartmentalised with answers that addressed each critical question in turn; the transcripts followed the normal flow of conversation, which I felt was rich and detailed.

Table 6 provides an overview of how the data generation methods were designed to address critical questions. The overlap of the sources, tools and methods for data collection and data generation is seen in this table. It is not a linear pattern or incremental line of enquiry but demonstrates an integrated approach that moves towards addressing the critical questions.

Table 6:

Critical questions, and data collection and generation methods

Critical Questions	**Data collection and generation methods**
What are pre-service teacher education lecturers' constructions of critical thinking within the intended pre-service teacher curriculum?	• institutional database and • biographical questionnaire (closed) for participant selection • individual lecture observation and • fieldnotes and memos • (early) document analysis of institutional curriculum documents, and • national curriculum and policy documents to establish declarations of CT in pre-service teacher curriculum
What evidence is there of the enactment of critical thinking in the pre-service teacher education lecturers' lectures?	• individual lecture observation video recording review used as a catalyst for discussion in • (early) document analysis of institutional curriculum • individual semi-structured interview • semi-structured interview transcript for data generation and analysis • fieldnotes and memos
Why are pre-service teacher education lecturers' (changing) constructions of critical thinking, enacted the way they are?	• semi-structured interview • semi-structured interview transcript for data generation and analysis

In the next section, I provide a brief explanation of how each participant proceeded in the interview.

4.8.1.1 Sheldon's interview

Sheldon was confident but pensive and tentative in identifying critical thinking. I noticed that he was comfortable with discussing tertiary teaching and learning related to disciplinary knowledge and its sources. He spoke of the pedagogical knowledge needed by students to teach in the social science discipline. Sheldon demonstrated how the discipline might be taught in classrooms by pre-service teachers by modelling teaching and learning strategies in lectures that were indicative of CT.

4.8.1.2 Ali's interview

Ali seemed reticent to identify enactments of critical thinking as they may have occurred during the lecture. Instead, the matter of critical thinking was considered to be present in all parts of the lecture, particularly in his own approach to teaching and learning. The flow of the interview was punctuated by long silences. In retrospect, I imagine that there was an expectation that the interviewer would provide more structure by asking more questions (or perhaps providing an explanation) even though it was made clear at the start of the interview that it would be semi-structured and based on critical questions. I was prepared and posed more sub-questions as prompts to set the participant at ease and I probed to encourage conversation.

4.8.1.3 Gugu's interview

Gugu was excited to be discussing critical thinking; she had watched the DVD of the third-year professional studies group of students in her lecture. She was able to identify many enactments confidently and there was a great deal of interaction.

4.8.1.4 Tina's interview

Tina was interested in the opportunity to explore critical thinking in her lectures. The conversation flowed easily but I gained the impression that she expected me to ask more questions. On a few occasions, analogies of CT in life experiences, rather than in an academic sense were used to name and describe the enactments of critical thinking. The analogous responses meant that the meanings were not always clear; I was able to clarify some of the points by asking additional questions but I did not have the opportunity to clarify all of them because the time allocated for the fieldwork had come to an end.

4.8.1.5 Mike's interview

Mike was enthusiastic about the opportunity to discuss critical thinking. He taught a home language methodology module to second-year students and regretted that the lecture for observation was not entirely teaching and learning in the traditional sense, but rather a discussion about methodological application for teaching home language, which he had planned would occur using group work during the lecture. The students were largely disengaged from what they had been tasked with, but there was nevertheless much to discuss with the participant. The interview flowed and rendered a complex discussion about what CT was and how it could be seen as intrinsic in a language methodology module.

4.8.1.6 Linda's interview

Linda, who teaches social science, was enthusiastic about discovering how she measured up in the critical thinking stakes. There was a confident approach to discussing how teaching and learning, and life in general, contributed to and was affected by critical thinking. It is possible that the participant had not viewed the DVD prior to the interview so the discussion could have been affected by that situation. I utilised the points I had marked in the video to prompt her to talk about what she viewed as CT.

The intention was to encourage a dialogue, followed by the construction of a final report of the conceptual understanding, underlying reasons and the shaping forces that may have contributed to the participants' (changing) constructions of critical thinking. Utilising semi-structured interviews with prompts created opportunities for open-ended responses to questions and my participation in the discussion. The semi-structured interviews were intended to be an opportunity to discuss the constructions of critical thinking in depth with the emphasis on using fieldwork and interviews "to see the concrete situation and informants in person" (Glaser & Strauss 2008, p. 162).

It appeared that the lecturers were thinking deeply about their constructions of CT. It was challenging to work through the interview period when silences halted the discussion temporarily. Two participants found it stressful to talk about their thoughts on CT and they suggested that I should research information about CT in the relevant literature – I interpreted their comments as being a diversion from the pressure of the discussion. It was also that for both the latter participants, that the language (English) that I was using for the interview, was not their mother tongue. It might have been the case also that the CT matter was quite intimidating, especially since the inclusion of CT in lesson planning was instructed at an institutional level. Some of the participants may have felt that they were not sure where to begin or the direction to take. Little did they know that I, too, had little idea.

A noticeable factor in the instances where the lecturers had not watched the video footage or where the lecture was not one in which CT enactments were seen to be plentiful, the participants spoke about what could or should be rather than what was on the DVD record. I interpreted that there was insufficient time to watch the videos. I was tempted to use my own notes and counter timings from the DVD to prompt discussion but I felt that was leading the discussion and possibly making points that would not otherwise have been raised by the participants. I let them talk and explain as they saw fit. Some relied on memory of the lecture

itself which was not a problem as the discussion proceeded when we allowed the DVD to run at intervals during the interview. The participant would ask me to stop the video when they wanted to discuss a point. This added to the duration of the interview.

4.9 Researcher's reflexivity

I found the work of Antjie Krog, a South African academic, poet and activist, powerful in understanding my role in the speaking, listening and interpretation of the research. Krog's (2018) work, based on post-1994 South African Truth and Reconciliation Committee hearings, provided me with a layer of mental imagery against which to view the interaction with the participants who were not first language English-speakers. It bothered me immensely that, although I am bilingual in two South African languages, and I hold a formal qualification in the study of one African language, I was interacting with persons from 'home language' backgrounds other than my own. In some of the participants' languages, I had no proficiency at all. It seems almost senseless to say so, as each participant is an individual, but language can indicate social constructions other than my own, and I was not sure I could do justice to the data gathered from each participant in an equitable way.

I wished I could have conducted the interviews with more access to each participant's home language because that framing would be in line with Krog's point about perspectives conveyed through language. Krog (2018) and Samuel (2008) cite the influence of language and culture on life and career respectively. I felt that I had to be sensitive and watchful of the mind with which I entered the research field, and of the data that it would yield and why it would yield such data.

I also recognised that the research questions might be falling on the ground where permission to speak was perhaps not granted to an *individual* from a culture which favours collectivism – collectivism exists among many language and ethnic groups in Southern Africa (Smith (1999), as cited in Ramrathan, Le Grange and Higgs, 2017). It can have the effect of silencing individuals – altogether a different response from being disinterested or shy. It was important that the voices were heard and that I understood the context in which the participants spoke. Many of the participants were second and even third-language English speakers, so I wondered if and how language and experience in higher education would influence how critical thinking might be constructed. Questioning the role of language and cultural experience in this situation is important, as the selection of participants indicates; it is indicated too by Krog (2018) and

Samuel (2008). The power in Krog's research suggests analysing the 'rural mother' with a rural filter, not a Eurocentric filter (p. 489). I did not adopt a literal meaning from Krog's work. I interpreted this as meaning that culture is embedded in language and therefore, I would miss points from speakers of languages other than English. This is a tall order indeed for a white English-speaking, South African working with participants whose cultures and languages were, and continue to be, marginalised.

The participants had already committed to my academic language and culture and I was not able to in their languages because I know only two well enough to converse at a tertiary level. I then realised how my ineptitude in understanding the languages with which I was not engaging might prevent me from asking the questions that might open the discussion. Instead, I followed Stake's (1995) advice to ensure clarity by simply asking if I had heard this or that correctly. Krog (2018) showed me that I should continue my conversations well beyond the interview to gain a more participant-oriented understanding of the phenomenon but there was insufficient time to do so. I do not feel that *credibility,* which Krefting (1991) advocates, was deeply affected in this case because I followed Ramrathan, Le Grange and Higgs (2017) who warned against the construction of simple and ignorant interpretations of interview data. It was possible in all the interviews to discuss at length, the lecture views of CT as they perceived it and to listen to the explanations for why they considered CT to be constructed and enacted in the way it was. Two interviews rendered slightly less detail. It was not on account of the lack of understanding of what was required or a language barrier but rather a contemplative approach which two of the lecturers used before they answered the questions posed to them.

4.9.1 A methodological design in pursuit of quality data

An explanation of the measures employed to ensure a methodological design that delivers quality data for the study is provided below.

4.9.2 Trustworthiness (truth value/validity, reliability, creditworthiness, robustness, dependability)

This section establishes the trustworthiness of the study which is an integral component of qualitative research. According to Bryman (2016), 'consistency' is considered a feature of reliability. "Reliability refers to the 'stability of findings' while 'validity' refers to the 'truthfulness of findings'" (Carpenter, Suto & Suto, 2008, p. 148). Scholars, Lincoln & Guba (1985), and Rule & John (2011), claim that to ensure the trustworthiness of qualitative research, the research has to answer the issues of credibility, transferability, dependability and

confirmability. I will visit each of these facets in this section. Rule and John (2011) hold the opinion that qualitative researchers are good at ensuring the trustworthiness and authenticity of data.

Validity refers to the truth and accuracy of what occurred (Bryman, 2016), while Liamputtong (2020, p. 1897x) avers it "asks the question about whether researchers are measuring what they believe they are measuring?". The term 'rigour' is commonly referred to as *trustworthiness* in qualitative research. It is a way of evaluating the quality of qualitative research (Liamputtong, 2020, p. 1897w).

4.9.3 A preference for 'truth value'

Krefting (1991), in an attempt to establish *rigour* or *trustworthiness* in qualitative research, draws on the work of Guba (1981) as a guide. I used the guide devised by Krefting (1991, 2022) for this study. She espouses as one of the core features of trustworthiness, the establishment by the researcher of the '*truth value'* of the data. This involves the researcher's establishment of "confidence in the research design, truth of the findings" for the participants and "…the context in which the study was undertaken." Krefting (1991, p. 216) equates '*truth value'* to '*credibility*', not only in the latter but also in that the researcher presents "accurate description and interpretations of human experience." Cohen et al. (2011); Cresswell (2021) and Sandelowski (1986) foreground the need to attend to the degree to which the instrument contributes to the validity of the processes and responses. To facilitate the exploration of thinking and action in relation to CT and accurate reporting, my method preference in this study was to ensure the principle of establishing a *'truth value'*. I have made a considerable effort to do so by keeping as close to the transcripts as possible in presenting the data so that the participants' truths are foregrounded. I have also endeavoured to interpret the data, primarily in relation to what the participants reported on their worldview. This, however, was not closing out a conscious reflection on my researcher positionality and bias, a phenomenon well-documented in social sciences research. In my case, I identified myself as a professional teacher, a lecturer of pre-service teachers like most of the participants, and a South African who, unlike the participants, had lived abroad for almost two decades. I brought to the situation my framework with which to organise, study and analyse the findings and that proved to be challenging. It is likely, thus, that the data production, analysis and representation contain elements that embody both the participants' worldviews and my own in interactive dialogue with each other. This dialogicality is an endemic feature of in-depth case study work.

I spent a considerable amount of time planning the data collection and once the data had been generated, I invested countless hours in the analysis and interpretation thereof. The data I had collected and generated (data corpus) could not possibly be used in its entirety. The data that were omitted, I endeavoured to ensure I omitted in a conscious and informed manner. While trying to preserve the 'truth value' of the participants' data, I had to constantly remind myself that I should not look for what I anticipated I might find (my a priori agenda) (Sandelowski, 1986). I had to guard against foregrounding the latter and interpreting multiple realities which were not my own. Krefting (1991) said it was necessary to step away from the thesis at intervals to let the data speak more clearly – that was a valuable suggestion which I followed. I also attempted to ameliorate the bias by using the participant lecturers' words where it was appropriate and in a manner that provided context for those words. I made use of triangulation within the data sources by using field notes and memos to reflect on my emergent thinking about the data (Krefting, 1991). I was not able to engage with participants after the interview completion in the way that I had planned to. Furthermore, in a small organisation, I was aware of the possibility of exposing the participant identities by engaging in further in discussion about CT, and finally, time constraints were very imposing in a very pressurised institutional environment.

Triangulation is often encountered in qualitative approaches where the researcher might be accused of focussing on (un-intentionally) being directed towards establishing a single truth. Given that follow-up discussion with participants was not an option, I consciously attempted in my analytic approach to be directed towards developing a plethora of approaches to develop insight into the phenomenon (Krefting, 1991, Yin, 2014). I planned that the descriptions of the participants' data created through the analysis process would be recognisable to readers or other lecturers who have engaged with CT in the lecture setting.

4.9.4 Applicability and transferability of sample demographic and methods

The second aspect to which Krefting (1991) attended was that of *applicability,* specifically the generalisability of the research to other populations. I have already discussed the background and context of the research conducted with my participants. Sandelowski (1986) reminded me of a limitation in this research – it would be presumptuous to assume or imply that this study's findings would have been the same in a different HEI. I would expect them to be different since I approached my study from an exploratory rather than a hypothetical perspective. Lincoln and Guba (1985) provide helpful advice for the qualitative researcher who is predisposed to

transferability issues. They claim that it is incumbent on the researcher in a new context to determine the applicability of the methods employed by another researcher. As a researcher, I should describe the data as fully as possible and make my methods clearly understood. The research conducted by Stake (1995) was used as a guide to develop the interview questions and strengthen the dependability of this study. A dense account of the context and a detailed description of the data collection and analysis procedures contributed to this study (Rule & John, 2011), which also set the conditions for other researchers to decide on the credibility and transferability of the study. Creating a sound case of participants is a step towards achieving construct validity and the research's '*transferability'* (Krefting, 1991, p. 220). I would state that the transferability of the study was less of a concern in this explorative endeavour, because I sought depth and insight into the views of a few lecturers rather than attempting a wider study with less depth. The contextual nature of this study allows for transferability if the methodology is adapted to a similar context.

4.9.5 Consistency and dependability

I considered how important it was for the study to measure and provide the same findings whether administered by me, or by others, with my participants. Sandelowski (1986) described consistency in a quantitative study as stability and equivalence. I agree with Krefting (1991, p. 216) that I might revel in the diversity of the data rendered by a unique group of participants in a unique setting where I could explore the outliers, and the common or contradictory elements of the data – "a range of experience rather than the average experience." If consistency was sound in this study, then it would be defined as *'dependability'*. It permits variation. Variation was anticipated in the selection of the participants and was explicable in the circumstances in which the research was conducted and in the data that were generated. I would admit to consistency in the processes for preparing to enter the field and I would admit to a degree of consistency in the *process* of 'reading' the data; otherwise, it would be too haphazard for the requirements of planned research. Consistency is important in more than just the methods and data generated through those methods. I wanted the processes of data collection, generation and analysis to be confirmable. Braun and Clarke (2006) claim that failure to explicate the data analysis process results in the inability of other researchers to evaluate the work. I have provided dense descriptions of the research methods thus far. I asked another researcher who was divorced from the research site to comment on the *process* of the research I had designed (Krefting, 1991) and I received feedback from the individual that it needed some adjustment where I had failed to provide sufficient detail about triangulation and the audit of

the items that constitute dependability. I need to reinforce these by using terminology consistently and describing more densely to enable step-wise replication of the methodological design elsewhere.

4.9.6 Neutrality or objectivity

Krefting (1991) explicates *neutrality* as the final aspect of Guba's (1981) model of trustworthiness. The researcher is required to demonstrate neutrality by ensuring the *truth value* and *applicability* of the data. The researcher's neutrality is inextricably tied to the latter requirement, but Lincoln and Guba (1985) express concern that emphasising the researcher is misplaced, averring that the data are more reliable indicators of *neutrality/objectivity.* Here, and previously, I have declared my positionality and my innate and learned tendency for bias.

During the semi-structured interviews, I was acutely aware that I might see and hear the participant's explanations from my perspective since I had been the lecturer of three of the six modules in previous years. That was potentially an insight not afforded all interviewers, but it was a reality that I knew I would have to deal with at every stage of the research. Hearing the participants explaining constructions of critical thinking was an alternative mode of knowing to positivist knowing (Bruner, 1986; Simons, 1996). My experience and familiarity with the role of a lecturer brought a personal dimension to the research and made me complicit in dialogically activating and contributing data to address the research questions and the participants' reflections (Glaser & Strauss, 2008; Rapley, 2008).

To alleviate the previously discussed possibilities, the verbatim responses were included (Flick, as cited in Cohen et al., 2011) in data reporting. Additionally, an electronic and hard copy 'audit trail' was kept to allow for the retrieval of manually coded data where required (Lincoln & Guba, 1985). An audit trail is a form of confirmability for the research, as discussed by Krefting (1991), who holds that the data can confirm the researcher's neutrality. The latter set of actions contributes to the study's trustworthiness.

4.9.7 Further strategies for building credibility – corroborating data sources or triangulation

Document analysis, which was conducted at an early stage in the study, was the first part of the research design and a step towards setting up a series of methods that would be used to as foil against which to understand the lecturers' claims concerning their enactments of CT. Bowen (2009, p. 28) writes about a collection of evidence for a case study and Bowen (2009);

Patton (1990); Krefting (1991); Rule & John (2011); Stake (1995) and Yin (2014) posit that triangulation helps the researcher to guard against the accusation that a study's findings are simply an artefact of a single method, a single source, or a single investigator's bias. Bowen (2009) states specifically that triangulation counters threat to trustworthiness, particularly the trustworthiness related to *dependability.* For example, "reactivity, researcher bias, and respondent bias" (p. 38), all of which I tried to counter, especially as I was working alone on this research. By triangulating the data, the researcher attempts to provide "a confluence of evidence that breeds credibility" (Eisner, 1991, p. 110).

This seemed a suitable explanation for accessing numerous sources of information for data collection and generation. However, the volume of data that was gathered from document analysis, lecture observation videos, audio recordings and interview transcripts was overwhelming, which was precisely why a form of triangulation was needed. The triangulation - not limited to linear connections, but an array of intersections of squares, circles and triangles that intersected, overlapped and were capable of being moved into different planes and positions. What I mean by this is that the interview transcripts were read repeatedly, the national curriculum, policy and institutional documentation were viewed in relation to the interview transcript data. It was necessary to look at when the documentation was devised to gauge if any changes were evident in the way that CT was recorded by the lecturers. The curriculum documents for P-STE were helpful in shaping what CT should have been activated against, while at the same time, they revealed surprises and twists.

The biographical questionnaires positioned myself and the participants in relation to the curriculum and national documents. This was three-dimensionally arranged and more flexible than one would associate with triangulation in a more frequently-encountered sense. This understanding that the data collection and generation were not bound by the vectors and lines of a triangle. This concept of integration sat more comfortably with my organisational and thinking process and it provided an opportunity to employ reflexive thought about the data gathered via various methods (Krefting, 1991). It was difficult to meet again with lecturers as suggested by Krefting (1991) in the busy institution, and even more difficult to discuss the data with knowledgeable colleagues (peer-examination), because the participants' anonymity would have been compromised. Any discussion among the limited number of specialist lecturers would have resulted in those in the institution being able to identify specific participants, so I was the lone researcher.

4.10 Ethics

Before the study began, ethical approval was granted by my university and the institution in which the research was conducted. I found that obtaining the documents for this portion of the research reassured the participants that the study was legitimate and approved, especially when one of the participants spoke to me about asking permission from the manager to participate in the research. Ethics involves the application of the moral principles embraced by society. They include equity, goodness, respect, fairness, kindness, and more. The Belmont Report (USA, 1979) has as its first principle, respect for persons. Ethics guide researchers through their activities and must pervade all parts of the study from the design to the writing of the thesis (Rule & John, 2011). This challenges the qualitative researcher to consider the claims they make about capturing the truth and protecting the participants in a study. Liamputtong (2020) draws attention to the newest ethics considerations in qualitative and quantitative research that must be implemented because of the harm that has been inflicted by researchers in the past. Physical harm is rare but a range of other forms of harm must be considered. Cohen et al. (2011) and Durrheim & Wassenaar (2002) term this *nonmaleficence,* which equates to 'do no harm'. All discussions and interviews were conducted in confidence. Persons outside the participant group who knew about the lecture observations for critical thinking were the students present in the observed lecture. However, a discussion about who might reveal the participants' identity was part of the second meeting with each participant. The agreement was that it was a calculated risk. I assured complete confidentiality on my part.

I assigned pseudonyms and changed key identifiers to ensure anonymity. All folders, files and documents that relate to this thesis are stored safely. Although the participant lecturers were considered to be at little risk, there were complex matters to consider concerning their personal and professional pride. It cannot be known what could surface in interviews therefore, I ensured the availability of on-site counselling to assist the participants if the research triggered an adverse reaction. I purposely anonymised the name of the institution to add a layer of security to the task and I hoped it would alleviate the view that the context was somehow responsible for the nature of the findings. They are impossibly interlinked in the same way that my positionality is a product of my inescapable past.

The principle of autonomy was upheld. Durrheim and Wassenaar (2002) describe autonomy as the practice of informing participants of the focus, purpose and use of their data. It is also the second principle of *beneficence* (Belmont Report, 1979; Cohen et al., 2011) in which it must

be clear who the beneficiaries of the research will be. I explained the co-constructive nature of the task and that the target audience would be academics, practising lecturers, readers of academic literature and persons present at the presentations of the research findings. Participants knew that their participation was voluntary. Each participant signed informed consent forms agreeing to participate and was notified of their right to withdraw at any time without fear or favour, and with their right to anonymity in force.

Researchers interested in human interactions generally choose a qualitative method. This study required the participants to use their intellectual ability, therefore, their intellectual property needed consideration in terms of storage, access and use. Some of the participants may have been feeling a little insecure about the adequacy of their contributions to the task. Since the human factor was at the forefront of the observations and discussions, they needed to feel secure and be thanked and encouraged. It was good to have their trust and the need for me to maintain my integrity as a researcher was more crucial than ever.

Justice, the third principle of the Belmont Report (1979), discusses the advantages and disadvantages of the equal and fair distribution of access and benefits and the ethical issues that relate to what is permitted concerning human subjects. Continuing in the spirit of following ethical procedures and pursuing ethical behaviour, the data collection and data generation methods were openly discussed to achieve transparency. The different data recording formats were given minute attention to detail to represent and respect the contributions.

I remained true to the plan of employing multiple methods of data gathering and generation. They offered structure to the task, and I was able to proceed as discussed with the participants. The data were managed systematically by using labelling and storing conventions for ease of retrieval (Rule & John 2011). The identifying details of the research sample were anonymised to respect the participants' and the participating institution's right to privacy. The data used in writing the chapters were attributed to pseudonyms in the best effort to maintain confidentiality. All files, folders and documents pertaining to the research are stored securely (Patton, 2002). Suitable ethical procedures contribute to the trustworthiness and quality of the research (Braun & Clarke, 2006; Rule & John, 2011).

4.11 Data analysis

The steps of data analysis are set out below with reference to Braun and Clarke (2021) specifically. Each reference to Braun and Clark indicates a new step or consideration of thematic analysis.

Braun & Clarke (2021) and Krefting (1991) state it is vital that data analysis is given serious consideration prior to the start of the research project to ensure that it follows a path that is consistent with claims about the research design. The data analysis must be robust (Mitchell, as cited in Merriam, 1988).

Thematic analysis was employed. Boyatzis (1998) sees thematic analysis as a general tool for analysis, while Braun and Clarke (2021) insist that thematic analysis is a foundational method of data analysis in-its-own-right, although there is no fixed process for thematic analysis. Braun and Clarke (2021) explain that thematic analysis may employ techniques such as data coding, however, the study conducted by Hanley (2019) on the methodological design of a writing as assemblage, aver that data coding can erroneously impose a hierarchy and relational patterns that can truncate thinking about the data (Hanley, 2019). Taylor and Ussher (2001) who comment on thematic analysis, refute that themes 'emerge' from the data because such implies that the researcher passively permits this to happen. Instead, thematic analysis allowed me to declare an active involvement in identifying themes and patterns, selecting those of interest and reporting them to the reader for multiple new thoughts to take flight. I declare that the "…theoretical framework, and methods must match what the researcher wants to know, and that they acknowledge these decisions, and recognize them *as* decisions" (Braun & Clarke, 2006, p. 80). Braun and Clarke (2021) state that thematic analysis is not directed by foregrounding but permits the researcher the space to see, hear and read more widely. My analysis consciously sought a holistic view of the constructions of critical thinking. I commence by explaining how the transcripts of the semi-structured interviews were treated.

4.11.1 Preparation of the transcripts

The audio recordings of the semi-structured interviews were transcribed verbatim by a transcriber. Lapadat (2000) indicates that numerous conventions for transcription are prescribed in psychology and the social sciences. At this point the typed transcripts served as evidence of the main focus of the semi-structured interviews, and at times I needed to refer back to video recordings (those viewed with the participants) to clarify and confirm for data

analysis purposes (see Appendix E and Appendix F). I then listened repeatedly to the audio recordings and adjusted the transcripts for accuracy at the grammatical and language levels, ensuring that every word, pause, hesitation, interruption, chuckle and cough was noted as carefully as possible (Braun & Clarke, 2006) to preserve the expressions. At times, I needed to refer to the audio track of the video recording to fill in the spoken expressions, which were difficult to decipher on the audio-only recordings. I did not use the video recordings of the interviews for any other purpose.

Lapadat (2000, p. 206) contends that "Spoken language is structured and accomplished differently than written text". I decided to use "my knowledge of written language to evaluate it" (Lapadat 2000, p.206). In other words, the writing before me was regarded as the closest means of understanding at my disposal. Kvale (1996) suggests that when transforming oral discourse into text, the meaning can be stripped away and the context lost. The loss of meaning and context may contribute to bias occurring as a result of the "selective or interpreted recording of data/transcripts" or "transcriber selectivity" Kvale (1996). Braun and Clarke (2006) reminded me that the transcript is not the data; instead, the recorded interview is the data and that one should return to it repeatedly. I tried to stay as close as possible to the data. Lapadat (2000) avers that transcription that meets the researcher's needs is adequate and I decided that this approach would serve my needs, providing that I could respect the participants' contributions by bearing the abovementioned points in mind.

4.11.2 Approach to analysis of transcripts

I became convinced that a case study, utilising thematic analysis which "reports experiences, meanings and the reality of participants" (Braun & Clarke, 2006, p. 810), was a seamless fit for this study because the method intersected effectively with an interpretivist paradigm which dovetailed with and valued input from various role players in the research.

All of the data analysis in this study was completed manually rather than by means of software for qualitative analysis; this allowed me to have a closer experience with the data. In the early stages of the formal data analysis, I kept each data item (national document, institutional documents and semi-structured interview transcriptions) separate per participant. The handling of the data items is described in the ensuing section.

4.12 Levels of analysis

The analysis comprised three levels.

4.12.1 Level One analysis – handling the transcripts

Transcription analysis was the first stage of the data analysis (Braun & Clarke, 2006, p. 88). The analysis is transforming the raw data into themes. Braun and Clarke (2006) call for a precise process.

The transcript of each participant's semi-structured interview was read closely and skimmed and scanned. I used colour, shading, shapes and letters in the initial coding (Bogdan & Biklen, as cited in Cohen et al., 2011, p. 560) to explore how the participants spoke about knowledge. The data, which were marked in this process, are referred to as data 'extracts' by Braun and Clarke (2006, p. 79). I had to guard against being drawn to the same passages time and again. Researchers cannot escape their own reality and interpretations (Braun & Clarke, 2006), but awareness of this tendency assisted me in striving for some degree of neutrality. Miles and Huberman 1994 (as cited in Cohen et al., 2011) suggest that one arranges data in a way that brings clarity to the search. I carried out the same process to determine the references to CT in each transcript. Words, phrases, sentences and paragraphs, and more nuanced pauses, were drawn together in broad senses of meaning (data chunks) during this process of seeking reference to both knowledge and CT. In this instance, 'relative frequency' was not a key objective of the analysis in the way described by Arsenault and Anderson, 1998 (as cited in Cohen et al., 2011), even though it could have been used in that way.

I had to avoid being steered too strongly by the reading I had encountered on knowledge and critical thinking and I found that there is a fine line between the researcher being informed by reading and directed by reading. That subtlety is vital to note because understanding it can effectively prevent instances where no analysis is performed because it has all been achieved by the reading. Braun and Clarke (2006) do not fully support the idea of analysis needing to be as exhaustive as possible in the way that Bell (2010) suggests. Nor is categorisation, comparison, linking and further comparison used in the grounded analysis (Ezzy 2002 (as cited in Cohen et al., 2011). However, I would say that instead, the analysis in this study was achieved using a series of themes beginning with grouping the data as described hereunder.

1) Listing and describing the types of knowledge which lecturers stated were necessary for CT to be activated against.

2) Determine the entries of the term 'crit' and its derivatives in the individual study letters. Determine where the lecturer indicates the CT will be in focus in the module.

Points 1 and 2 above became a springboard for thinking about what CT is activated against. and how it is declared in the study letter, as I had established that knowledge and CT were synonymous. (see Chapter Two).

1. The individual participant's ideas about critical thinking as explained during the semi-structured interview, and as they had been observed and heard in the lecture (audio and video recordings of the lecture) were visited repeatedly.
2. The constructions of critical thinking that were neither claimed as an enactment nor discussed but seemed to be evident in the analysis of the semi-structured interview transcript (i.e. points that the lecturers and/or I had overlooked).
3. The factors which the lecturers said or implied influenced critical thinking in P-STE.

Braun and Clarke (2006) discuss how a theme is determined. It is "some level of patterned response or meaning" across a data item (interview transcript about the lecture observation video) and perhaps across data sets (all interview transcripts about the lecture observation video). It was indeed the case that there were themes (data extracts) present in all of the above and they occurred across all the participants' data items. I attempted to achieve intellectual honesty by stepping back from the interpretations at intervals to allow the information and findings to percolate in my mind.

Revisiting the themes or "data extracts" (Braun & Clarke, 2006, p. 79) is a necessary part of the thematic analysis approach (it is recursive) because it assists with the confirmability of the data, and helps the researcher to identify outliers and new or redundant themes. This is unlike statistical analysis where anomalies are discarded when their statistical significance is minimal (Gomm, Hammersley & Foster, 2000). Krefting (1991) holds that it is equally important to consider discrepancies in the 'data extracts', as they present an opportunity for exploration, and credible explanations must be offered, accurately interpreted, and reported (Braun & Clarke, 2006). I found this to be necessary and enlightening each time I looked at the data extracts.

4.12.2 Level Two analysis

Level Two analysis involved the close reading and interpretation of the data.

4.12.2.1 Themes drawn into data chunks

The extracts were drawn into data chunks (Braun & Clarke, 2006, p. 79) and then into key themes that were determined by the amalgamation of the participants' comments and actions. I then built discussions around the findings (Rule & John, 2011). The participants' comments were then placed in themes for comparison with any new data extracts that were evident from the re-reading process. The level of abstraction required occasional paraphrasing to remain as close to the transcript as possible, and to preserve subtle wording and expression while avoiding banal explanations of low-level data descriptions and paraphrasing for the want of interpretation (Braun & Clarke, 2006). I found the groups of meanings amplified each participant's message by identifying what was of interest in their words and actions and the possible reasons for them. Most importantly, the research questions were used as the overarching guide for the explanations (Braun & Clarke, 2006).

Thematic theory analysis is a reflexive and iterative process of data investigation (Braun & Clarke, 2006; Strauss & Corbin, 1990). I found myself moving between themes and connecting and thinking at multiple levels. The first step was to analyse the institutional documents for a better understanding of how the lecturer declared CT was going to appear in the module. Then I attended to the transcript again to find direct references to critical thinking (what the lecturers claimed it to be). The second was to analyse indirect references (implied meanings of critical thinking). Drawing inferences from implied meanings in text can be criticised as applying too much personal interpretation, nevertheless, it is part of the process and I had to think about the intellectual honesty of the data. It meant avoiding the tendency to hear and see what you anticipate. The third was to look at what the participants had designed as critical thinking enactments in the observed lecture. This involved an intricate process of crossing between what I, and the participant, had noted when watching the lecture observation video. In some instances, I noted the differences between what the participant verbally claimed as a construction of critical thinking and what they claimed as an enactment. Those were rich moments of realisation of the unspoken that needed to be delved into more deeply. The matter of CT took on a life of its own, depending on whether it was being informed by the participant's construction, my observation or the interpretation of each about what the other was thinking and saying. Braun and Clarke (2006) indicate the complexity of negotiating analysis because once video and interview actions have been seen, they cannot be unseen, and this is why they must be read as fully as possible by the researcher, as stated earlier in this section. It is vital to report what the participants declare in interlinked chunks (data items and extracts). Patton

(1990) highlights the need for layers of understanding of the whole as opposed to individual chunks that make minimal sense on their own (Glaser & Strauss, 2008). The interpretation of the extracts and the relationships between them is not always captured in the raw data extracts and their intersections must be explained. I identified the possible relationships between them because without that there would have been no further development of thoughts for understanding the constructions and enactments of CT. I believe that the researcher's integrity is tested in these situations. A choice must be made between reporting what might be convenient to the researcher and what is fair and representative for the participant. This stage of the analysis offered possible interpretations of the data chunks and sets. The data chunks and sets were discussed in the second level of analysis.

Braun and Clarke (2006) indicate that sub-questions arise from the main questions as the data analysis progresses. I attempted to address consistency when reporting data by naming the commonality of the data extracts concerning knowledge in the data analysis chapters. Examples of this can be found in the headings and sub-headings in Chapter Five (e.g. CT with, for, alongside, without). In Chapter Six in which the themes of CT are explored, I used a similar naming convention for the headings and sub-headings. I then built levels of theory from explicit to interpretive levels (Boyatzis, 1998) (see Chapter Five. Level Two analysis which constituted data-driven analysis.)

As the researcher, I spent a considerable amount of time analysing the lecturers' practices, habits and experiences as they worked with knowledge and CT and not necessarily on the CT itself. The object, CT, was scrutinised through that which was visible and audible. So, in pulling the practices, habits and experiences together, I was constructing CT as a whole; those components were treated as co-dependent (Denzin & Lincoln, 2018) – in this case, the CT was viewed within the pedagogical work of the lecture. At the end of the Level 2 analysis, the themes were considered internally consistent because I had used the same set of data collection instruments in each lecturer instance to explore the relationship between the way that the participants worked with knowledge and the way CT had been declared in the SLs, the way that CT was named and described, and enacted. It was at this point that I could begin to shape those interpretations in individual participant report writing. There were similarities and dissimilarities to report on, which seemed to be the central points of the discussion (Braun & Clarke, 2006). It was also necessary to draw some of the interpretations into cross-theme

analysis across participant data to draw out further possibilities and understandings of what the lecturers said and enacted.

4.12.3 Level Three analysis

Up until this point, I had refrained from approaching the data with any rival explanations because, to my knowledge, no other studies had been conducted among lecturers of education pre-service teachers in South Africa about critical thinking constructions and enactment to generate theory. I intended to reserve such discussion for Level Three analysis. (see Chapter Seven).

The Level Three theory-driven analysis generated substantive theory about how constructions and enactments of CT were integrated across lecturer data (in themes). The writing of the thesis is structured under topical issues (themes). The theoretical framework for Level Three analysis is 'assemblage' propounded by Deleuze and Guattari (1994, 2008). Assemblage is a political arrangement of concrete elements, personae and abstract machine. The perfection of the theory is in its conceptual arrangements that draw the individual, the curriculum and CT and the thinking related to all, to multiple understandings that are integrated, organised and yet clear for expansion and further interpretations of the possibility of meaning.

4.13 Limitations

The case study does not seek to be representative of other cases or typical of all institutions but rather to be representative of a particular phenomenon (Stake, 1995, p. 4) and situation (ibid., p. 8), which was perfect for the open-endedness with which this study was approached. The use of multiple sources of evidence was intended to strengthen the research's construct validity and raise confidence in the findings. The convergence of the data arrived at through the use of complementary methods and sources coupled with case reporting was adequate well-suited for the task. However, participants were reduced from six to four, for the purposes of analysis, because I found that data oftwo participants either did not hold a great deal of both enactments and discussion of critical thinking or that there was a significant overlap of data.

As a researcher positioned to work from a Western university tradition (WUT) in which I was schooled, I declare that the exercise of observing and interviewing lecturers who are from differing ethnic and language origins may have failed to do justice to the task of interpreting the experiences of others. This is a declared position which holds the potential for excessive bias, especially in the context of SA HE where the knowledge space is contested and

interpretations of knowledge are equally contested. This might be seen to reduce the coverage of the intended range of lecturer experiences. It was not what I found at all, instead, I was able to turn more attention to the full and complete case. The call for a trail of evidence in case studies (Yin, 2014) is central to authenticity, truth value and neutrality (Krefting, 1991); to this end, appendices are attached and an archive of raw data is available on request so that replication of this study could be conducted by an interested party.

The research was conducted in one pre-service teacher higher education institution (HEI). The independent status of the HEI provided specific parameters in which it operated. It drew on students who were fee-paying and who fitted a particular profile. The findings among participants and interpretations may not have concurred. At most, the *methods* used in this study might apply to a new setting, which is perhaps as much as a researcher using this particular set of methods in a qualitative paradigm might be able to confidently declare.

If I were to start afresh with this study, I would have been more exacting about securing lecture observations. It would have helped to expediate the interviewing and transcription of interview recordings. The time spent in the field was too protracted. The most frustrating issue was retrieving documents such as Biographical Questionnaires from the participants. The choice of paper or electronic form should have been only a paper-based form. I could have asked for its completion in one of the individual meetings held with the participants. It would have prevented having to ask for it multiple times. I would have preferred to observe and interview a slightly larger field of participants in more disciplines such as technology and sciences. It would have given some confirmation of what was discovered in largely humanities-oriented modules.

4.14 Chapter synthesis

This case study utilised the data generated through multiple methods to craft individual lecturers' constructions and enactments of critical thinking. Theoretical views described how seeing and hearing raise researchers' awareness when working in a multicultural environment where common and familiar are not so common and familiar, by virtue of the multiple natures of understandings. This case study set out to provide a sociological-type (Merriam, 1988) description or explanation (Yin, 2014, p. 8) that was analytical (Robson, 2002 as cited in Yin, 2014) and drew data-driven interpretations from themes generated through thematic analysis. The thematic analysis provided opportunities to craft in-depth participant data that highlighted

the participants' voices (Rule & John, 2011). However, this type of analysis recognises that the intricacies of the case study design are made possible because of the researcher who brings previously unnoticed points to the foreground. The approach is seemingly simple but it is complicated instead because the approach takes cognisance of the need to render rich and varied detail for consideration. Case study is a common approach utilised in qualitative studies conducted in the education sector, and in this case, the organisational plans used, meant that the trail of data was easy to trace, thus offering a physical audit trail and verifiability of data. The purpose of this chapter was to provide the reader with a means to negotiate and understand how the chapters that report on the data analysis were conducted. This chapter marks the end of Part One of the thesis.

PART TWO: LEARNING FROM THE FIELD

This part of the thesis reports and interprets data from the field. There are two chapters. Chapters Five and Six attend to constructions of critical thinking emergent from observation of lectures, and from semi-structured interview data based on observation in lectures. This study is comprised of a single-site case study in which six participant pre-service teacher education lecturer's data is embedded. The case study is a strategy that provides the researcher with the opportunity to explore critical thinking *in situ* (Verschuren, 2003, p. 137). Thematic data analysis approach is activated to analyse data from the field. The data are drawn into themes where tentative understandings of lecturer constructions of critical thinking are discussed. The researcher draws on multiple data sources per participant to construct rich individual and comparative descriptions. The unfolding description of the lecturers' conceptions and enactments of critical thinking leads to incremental and intertwined abstracted re-presentations of the data findings. These re-presentations render interpretations of the knowledge, knower and critical thinking triad. Representative trends and themes extracted and formed from the discussion, are carried forward to PART THREE.

CHAPTER FIVE: ENGAGING PRE-SERVICE TEACHER CONSTRUCTIONS AND ENACTMENTS OF CRITICAL THINKING: DISCIPLINARY AND PEDAGOGY PERSPECTIVES (national, institutional and individual level)

5.0 Introduction

This chapter, focuses on the connection between national, institutional and individual lecturer-level issues by attending to institutional documents, where (findings from four module study letters) are reported and discussed with a view to establishing what and how lecturers declare CT, which will be implemented in their lectures. The interview data on the lecturer expressions of CT are taken from four separate lecture observations and four separate semi-structured interview transcripts which record discussions about the observations. The data are discussed and analysed to establish how lecturers identify CT and how they declare CT in relation to how they enact CT in lecture observations, and how they discuss their enactments in interview data. The reflections across the participant data draw re-presentative themes of thick description of the relationship of factors that influence lecturers' activation of CT. The themes are formed which are further analysed to create consolidated key issues that participants raise about their constructions and enactments of CT.

5.1 Overview of the chapter

This chapter is comprised of two parts: the first analysing the institutional documents (study letters of modules), and the second reflecting on lessons learned about how the intentions of CT policy are communicated to lecturers and how CT is declared and implemented by lecturers across the module. The overview points to the main contents of the chapter (5.1). The first analysis focus reports an understanding of how critical thinking is declared in each institutional module document (5.2). The four individual participant data are presented separately (5.3). The first two participants work within the disciplines of social sciences in which the first lecturer thinks critically with the students, while the second lecturer thinks critically for the students (5.3.1 – 5.3.2). The third occurs in a module with a declared disciplinary knowledge purpose where the lecturer works alongside the students (5.3.3). The fourth participant works in a

fundamental discipline[19] in which their pedagogy occurs in isolation from the rest of the P-STE curriculum (5.3.4). Each participant provides a unique combination of declaration and enactments of critical thinking. *Reflections across the chapters* (5.3.5) draws together themes which point to intention, declaration and enactment of CT across levels (national, institutional and individual) of the P-STE education environment in which this study was conducted. The chapter synthesis consolidates the key issues to be brought into focus along with key issues from Chapter Five (5.4)

5.2 Declared planning for critical thinking in institutional level documents

To establish a view of how the participants declared CT in their lectures, document analysis was carried out on institutional study letters (SLs) for the four modules included in the data analysis. There was little difficulty in locating these documents because the institution in which the study was conducted had granted access to electronic versions and the entries themselves were quite clear. It was an institutional requirement that CT should reflect in SLs. Table 5 provides a summary of explicit and implicit expressions of critical thinking expressed in institutional SLs. The table helped to illustrate whether there was evidence that the intended curriculum (CCFO CT mandate) translated into the declared curriculum in the SL; which indeed there was, with greater or lesser frequency, across sections of the SL (aims, outcomes, content, assessment). (Specific section names withheld to anonymise the institution). I found that some lecturers mentioned the term very rarely while others wrote them frequently and they were distributed across sections of the SL.

The entries in the SL are declarations that CT has been considered in the module. In some instances, it is indicated who will do the CT and at other times there is no assignment of responsibility, only a term inserted in a section of the SL. The sections in which the term 'crit' appear not to be consistent across the sections; instead, the term is found in the assessment section. The expectation is that the term will be aligned throughout the SL itself. Perhaps it shows the presence or absence of structure for the CT pedagogy that has been declared. The data below report the expressions and placements of CT per module study letter.

[19] Fundamental discipline is one of the knowledge types prescribed for a P-STE programme (see Appendix A)

Table 5

References to the term 'crit' or derivatives thereof as found in module study letters (SLs)

Module	Module knowledge type	No. of references to 'crit' and derivatives in different sections per SL (including repeats)	Entries of 'crit' and derivatives
social science	disciplinary	5 (Appeared in sections of SL: Aims - 1 Content – 0 Outcomes – 2 Assessment - 2)	'critical' 'critically analyse' 'critically discuss' 'critical awareness' 'engage critically'
social science	disciplinary	10 (Appeared in sections of SL: Aims – 1 Outcomes – 8 Assessment – 1)	'critically discuss', 'critically evaluate' 'comment critically' 'promote critical attitudes' 'engage in critical thought'
Mathematics	fundamental disciplinary	2 (Appeared in sections of SL: Outcomes – 2)	'critically analyse'
performing arts	disciplinary	38 (Appeared in sections of SL: Aims – 1 Content – 1 Outcomes – 8 Assessment – 28)	'critically engage' 'critically analyse' 'discuss critically' 'listen critically' 'assess critically' 'critique'

Having tabulated what was declared at institutional level in the SLs, lecture observation and interview transcripts were analysed to determine what lecturers believed the declared

expressions of critical thinking entailed. The data reported below are taken from live lecture observations (and video), and from transcripts of semi-structured interviews per lecturer.

Table 7 gives an account of the names given to critical thinking by lecturers.

Table 7 *The naming of critical thinking offered by lecturers* (the columns are not related)

Critical thinking was considered to be:	
interchange between students	interrogating opinion
asking thought provoking questions	looking at points-of-view of others
logical-sequencing (e.g over a period of time).	being cyclically reflective
interrogation at a deeper level	using heuristics
thinking out-of-the-box	discriminant about one's own ideas
coming out of a small world of parochialism	
situating oneself in the world in which one lives	not about common knowledge; it is more than that
being reflective	problem-solving (mathematical)
being inquisitive	logic (mathematical)
problem-solving	problem-solving
constructing new knowledge	checking validity
discriminate	processes
looking at other viewpoints	alternative ways of working
discernment in reading and listening	inductive thinking
creating dissonance	deductive thinking
questioning knowledge	analysing
questioning validity	looking at ethics and values
discussion	lateral thinking
weighing up pros and cons	practical thinking

exchanging feedback	evaluative-thinking
providing rationale for decisions	imagining
exploring questions	challenging
probing answers	discussing
being inquisitive	empathising
interrogation beyond the obvious	giving free rein
formulating opinion	finding evidence
expressing conviction	written and verbal questions
enriching experience	
building blocks (using mind maps, making flowcharts, formation of new knowledge)	
amalgamating, incorporating new and old knowledge so that they find congruence	
giving students verbal help in conceptualisation of new knowledge	

The naming of the critical thinking is an introduction to how critical thinking was viewed by lecturers teaching different modules. While the naming of critical thinking is commensurate with many names provided for critical thinking in Chapter Two, the section below, 'The Participants' provides in-depth insight into how each lecturer explained and enacted critical thinking. This contextualisation of each participant's constructions and enactments of critical thinking is complex and therefore deserves deeper consideration.

5.3 The Participants: What informs the lecturer declared and enacted critical cross-field outcome - critical thinking (national) and how is it manifested in lectures (individual)?

In each instance, I report:

- a brief introduction about the lecturer (from the biographical questionnaire)
- the knowledge that was declared in the study letter and spoken about in the interview (to provide a context of knowledge against which CT was enacted)

- the CT data obtained from the lecture observation
- the CT data obtained from the semi-structured interview
- the purpose of CT

5.3.1 Sheldon: Critical thinking and History: An holistic experience WITH students

5.3.1.1 About Sheldon

Sheldon was a discipline specialist, a seasoned teacher of history in senior and further education and training phases and a lecturer with fewer than five years of experience in higher education. He taught History to students who were in the final year of an undergraduate degree programme.

5.3.1.2 Views on knowledge against which CT was activated in the observed lecture

The module was officially registered under the knowledge type – disciplinary knowledge (See Appendix A). The module author indicated in the SL that the module would cover "knowledge application, subject knowledge, validity of knowledge, historical knowledge and skills and knowledge" and include content items such as Reaction and Resistance to Apartheid – Internal Political Development and Resistance; South Africa in the Global Context, International Political Development and Resistance. All entries in the study letter referred to disciplinary knowledge.

Sheldon referred to the importance of books, textbooks, newspapers, listening to the radio, reading articles and being observant as a means of building knowledge. The knowledge, he explained, was to come from the past, present and future. Laws, past and present, were considered to be knowledge.

Sheldon mentioned many aspects of disciplinary knowledge in the interview – cultural heritage and background, multiculturalism, rural to urban migration, the socio-political landscape, the breakdown of customs and adverse consequences thereof and urbanisation/industrialisation. He said that knowledge existed in notes provided to the students by lecturers or devised by the students themselves. He considered foresight to be a form of knowledge that was necessary to determine or anticipate the outcome of an action or thought. It was as important to develop this form of knowledge in students as it was for them to engage in hindsight. Sheldon said the discipline of history claimed that it is studied to inform the future; it would then be a complete failing if foresight was disregarded as a form of knowledge.

Sheldon explained initially that the knowledge was highly academic and that this year it had become an emotional journey in which the students made a personal (affective) investment. The internalisation of knowledge and ensuing discussion amongst most students present in the lecture was not always achieved in the same way by all the students, nor among groups who had passed through the lecture room, but the present year, he said, had been a journey of self-discovery and personal positioning for students. Sheldon saw that students' deep engagement with the knowledge of the module and with other students had brought about this state of understanding.

Sheldon stated that the disciplinary knowledge of history was a story; it was subjective, not everyone's story but rather the selected linked events that formed threads not always determined by the lecturer, but rather by the direction in which the lectures proceeded with students' involvement.

5.3.1.3 Critical thinking in Sheldon's observed lecture

There were approximately fifty students in the lecture during the lecture observation. The participant lecturer verbally encouraged pre-service teachers to share how they would apply their skills in teaching and learning of the discipline and to encourage that in turn in the classroom, thus taking an opportunity to incidentally cover pedagogical insights into the teaching of history even though this module was registered as a 'disciplinary' and not as a 'pedagogical' knowledge module. Sheldon explained that critical thinking enactments were dependent on developing disciplinary knowledge. He believed that the sources of knowledge (as discussed above) were needed within this discipline both by himself and students – here he was referring to the examples that he could provide to students where catalysts and stimulation for critical thinking were required. Sheldon used a prescribed textbook and referred to other literature such as dictionaries in the lecture; he stated these were used to encourage critical thinking as they provided comparative material in relation to other materials used in the lecture; a fundamental requirement in the development of an historian's skills. It was claimed that critical thinking, enactments during the lecture were contingent on students holding personal experience, general knowledge, knowledge gained in schooling and academic knowledge. He was clear that the knowledge that students possessed prior to the lecture was varied. He said that there was a unique requirement for critical thinking in history to draw on collective memory (of past events in recent times).

At the start of the lecture, Sheldon encouraged students to think about knowledge in the module by referring to past and currently historically significant material encountered in the local environment (road names, public artworks, public holidays, advertising, propaganda) and then students were asked to think about how past and current knowledge is displaced by new evidence that may be additional or conflicting. The latter led to students being verbally encouraged to explore their own thoughts on historical material, facts and epistemological stances different from those of peers and authors.

Students were encouraged to lead in reading passages from varied texts, including academic articles, the textbook, dictionaries and available quotes as a catalyst for verbal discussion in the lecture. The participant said that the students were required to process the questions and make sense of the material. Sheldon claimed he deliberately used visual images (still slide images, and video clips) containing historical and contemporary representations of history and verbal explanation. These were presented along with many verbal questions to stimulate criticality and conversation; this interaction occurred between participant and one or more students (there was evidence that in a previous lecture, written questions based on a variety of sources had been used for independent task completion that involved critical thinking).

Sheldon claimed that the visual material was used to assist students in developing empathy. The use of visual material was a technique he employed from his experience of teaching a language (his second major subject of a degree (English)). He asked numerous questions of students throughout the lecture; they related to the reading of textbook chapters, academic articles and to the audio and visual resources. That led to the analysis of texts and later synthesis of information, and the decision for critical writing in independent tasks and assessments.

Sheldon noted and was pleased that one quite vocal student verbalised retrospectively how she had analysed visual material, a skill learned in an earlier unit of the module and subsequently applied in new situations, and in an assessment setting.

Students were shown how to use visual analysis skills and to formulate questions to pose to the lecturer, to themselves and to their peers. He encouraged students to lead the questioning. Collectively they addressed controversial historical topics and points comfortably and confidently in an effort to explore their own thoughts. There was sustained activity in the lecture that involved either the lecturer or the students reading, speaking, observing and listening.

Individuals were verbally invited to provide their opinions; a number of individuals were given the opportunity to contribute their ideas in the answering of questions - this activity was repeated at intervals during the lecture. Sheldon also drew on an observation he had noted within the lecture venue during the semester; he asked students if they were aware that they usually sat in the same position in the lecture room and that there were racial groupings in the room of 50 students. It was my observation that the students were willing to discuss the point openly; it led to an exchange about how the effects of separate development in South Africa may account for what can be observed in the lecture room and this was discussed in relation to Acts of government passed during the apartheid era (the current topic of study in this history module). The students discussed this point openly and calmly, they engaged with one another and with the lecturer. Furthermore, the lecturer encouraged the students to pose their own questions to himself, which they did. One student asked for clarity about a term and disciplinary concept. A number of students confidently, and of their own volition, asked questions of one another and shared their thoughts with the lecture group. The lecturer urged students to ask him questions and invited them to ask questions of one another which is how he had described CT thinking actions to be. Sheldon pointed out that students were willing to verbally challenge one another. He believed this was important and desirable. A stated prerequisite for discussion / critical thinking was in the form of an express instruction from the lecturer for reading from the textbook to take place prior to the lecture. There was a focus in the lecture for students to answer questions and discuss and reason with one another on various issues related to apartheid law and changes in social practices in recent times. To participate meaningfully required students to practice active listening.

Sheldon felt it was most appropriate to use a themed approach to the content of the module because it covered a vast span of segregation and apartheid eras in South Africa. Sheldon implied that he placed a great deal of responsibility on students; he deliberately designed a set series of acts for his students, and he led them through these in the lecture. In line with expectations of students, Sheldon said that critical thinking needed to be included in the lectures, and the lecturer needed to draw the attention of students to critical thinking form and purpose. However, it was possible that a lecturer may not always deliberately plan CT moments but that they might arise in an incidental way. Sheldon identified that critical thinking teaching and learning is partly guided by pre-service teachers' participation in the lecture activities. The students needed permission to think critically and,

it is about letting the students lead a little (Sheldon).

He also stated that the critical thinking and stimuli were to be provided by the lecturer, although it was also suggested that some knowledge could be discovered by means of CT by using a series of structured tasks.

Sheldon identified enactments as those which required students to use prior reading and existing knowledge about the past and present to explore new disciplinary knowledge from many perspectives. The students were encouraged to think critically about what was presented to them in many formats and from multiple sources. The students were also expected to incorporate prior knowledge – mostly from prior lectures. Engagement with materials was central to CT in the lecture and was expected of the students; their failure to do so would leave them "lost" (Sheldon) in the module. The lecturer explicitly stated that he had designed the lecture to encourage all of the above – he designed the lecture deliberately to incorporate CT and he worked with students to achieve critical thinking.

5.3.1.4 Reading Sheldon's constructions of critical thinking in the semi-structured interview transcript

At the start of the interview, with little hesitation, Sheldon discussed which actions were conducive to CT. Firstly he said it was the responsibility of the lecturer to ask thought-provoking questions and to receive or provide answers. He said that the knowledge was seen in cyclical patterns rather than in a linear way; it was a strategy which he felt helped students to evaluate the knowledge by revisiting and re-evaluating evidence from a range of sources. To this, Sheldon added the need for critical thinking to follow a cyclical pattern to achieve the skills required for an historian – the evaluation, reflection and re-evaluation of sources and evidence.

The properties associated with critical thinking were logic; the logic being of an unspecified type, meaning that the term was used loosely and not in the sense of formal or informal logic but rather to take steps to think, reason and explain in the way of making sense of something, "a logical process", Sheldon added. Coupled with the discussion about logic was his understanding of the learning of knowledge being chronological and therefore, logical in history. He held the belief that critical thinking could be about the past and present, for the present, and for the future. He indicated that knowledge was that of past, present and future all to be used to inform life now. He also called for the thinker to exercise rational thought,

meaning perhaps that there should be clarity and balance of thought. Sheldon explained that there should be reasoning applied to all evidence and reason exercised by oneself in the assessment of materials, discussions, questioning, supposition and hypotheses which he termed;

> *interrogation at a deeper level than at surface appearance (Sheldon) (or beyond the obvious) (my words).*

The idea of creativity and considering other opinions, and even "thinking-out-of-the-box", was raised. Sheldon was referring to the 'small box' world of student's own interpretation of history as encountered in school, in the media and at home. He was indicating the closed thinking that is endemic in societies where there have been restrictions on aspects of life in their national history. Sheldon also spoke of the importance of analysis of resources especially written and visual material. Central to the idea of analysis was the requirement for the students to compose well-reasoned or well-thought-out response to a piece of knowledge. The participant posited that the responses might simply be invisible (cognitive), or might have resulted in a well-formulated written or verbal product which was considered a pinnacle of achievement in the discipline of history. Sheldon had made a large investment in giving students the opportunity and confidence to express themselves in the discipline.

Sheldon stated that critical thinking required one to be inquisitive and exploratory and to be challenging of oneself (as opposed to complacent) because it was easy for students to remain inert in thought about history, particularly the ontological beliefs that they had settled with on account of their own life experiences. Student encounters with knowledge in History could range from being superficial to being an emotional investment.

5.3.1.5 Purpose of critical thinking

If for no other reason than to avoid confusing the students, there was a strong suggestion that the opinions and concepts formed through critical thinking should carry conviction which would make it more straightforward to explain and discuss matters in history;

> *It has to make sense to that person when you convey it. (Sheldon)*

He implied that the thinking would serve clarity when students taught the history to the learners in school. Critical thinking would occur in an academic setting and within a discipline where a knowledge base is needed. He added that critical thinking could occur outside of the academic

setting. Sheldon mentioned critical thinking skills were transferable from one discipline to another, although, the stimuli for that thinking would be commensurate with the discipline in question.

Finally, the group items of data revealed the purpose of critical thinking as being a means to train the eye to look for different perspectives with a view to encouraging different thoughts to changing perspectives, challenging the norm, seeing that not all things are the same for all people and

> *about situating oneself within the world [finding your place]. (Sheldon)*

Sheldon's enactments of critical thinking bore a close resemblance to the characteristics he assigned to critical thinking in the interview. Sheldon gave the students an holistic experience in which he structured thinking *with* the students.

5.3.2 Linda: Critical thinking and social science: Many pieces make the whole FOR students

5.3.2.1 About Linda

Linda was a lecturer whose academic and professional qualifications and experience had prepared her for school teaching. She had lectured for fewer than five years. She had academic qualifications in geography, sociology and educational psychology. I had observed a lecture with approximately thirty students in the lecture venue.

The module SL showed close alignment with the appropriate and specified disciplinary knowledge type. Knowledge of all descriptions (see below) were the building blocks for new knowledge. Linda stated students needed to be guided into the formation of new knowledge by means of critical thinking.

5.3.2.2 Views on knowledge against which CT was activated in the observed lecture

The social science study letter was officially registered as - disciplinary knowledge (See Appendix A). The author indicated that the module would cover the "knowledge of systems, application of knowledge, demonstration of knowledge, relating knowledge and co-construction of knowledge" in addition to specifically listed content items e.g. features on maps and legends. The entries in the study letter were disciplinary.

Linda lectured this module to third-year students. She viewed knowledge as a base from which to build new knowledge in the discipline and it seemed to be comprised of small parts –

concepts, ideas, facts, thoughts, theories, imagination, ideas, reading, academic articles, the World Wide Web, culture, civil society and political context. Named examples of knowledge were demography, graphs, maps. Knowledge, she stated, was found in documentaries and on television, in books and learned from other individuals. Linda asserted that knowledge existed in the students' minds, in books, through travel and in visual media. In Linda's opinion, knowledge was that which students brought to their discipline as a result of nature and nurture factors such as ability, inclination, culture, social status, economic situation, ethnicity, learned and lived experiences and opportunities for exposure.

The academic knowledge with which she worked was to be found in academic articles, reading, the Worldwide Web, lived experience and cultural and civil society and in reading. Linda believed in her ability to craft new knowledge creation opportunities for students to understand and use, by being very deliberate in the use of diagrams, flow charts, mind maps and the explanations of concrete and abstract concepts. The design of the learning in the lecture was scaffolded.

5.3.2.3 Critical thinking in Linda's observed lecture

There was a lecturer expectation that prescribed reading had been completed prior to the lecture. Diagrams and notes were displayed on the whiteboard in the lecture venue which she said would orientate the students to the outcomes of the lecture. During the lecture, Linda expanded and developed the notes and drawings on the whiteboard. Video and still images were used to stimulate thinking and to explain knowledge and concepts. Linda stated that enactments of critical thinking were elicited from students by the lecturer by means of exposure to various stimuli which included diagrams, drawings, visual videos and still images. Linda explained some concepts to the students and she also interpreted the meaning of thinking about these stimuli from different perspectives. Linda invested much time in her students' understanding of the content and concepts of the discipline by referring to real life and imagined examples. At intervals in the lecture, questions were posed and directed at the general group and at individuals; students who struggled to respond were given verbal clues to give them confidence. Students were asked to recall their own experiences and envisage new ideas. Linda did most of the work in the lecture by developing the diagrams and notes and allowed time for students to copy the notes down or to take dictated notes. The idea was to build step-by-step, the new knowledge and concepts in the discipline through illustrating to students how to integrate knowledge – it was demonstrated rather than experienced.

Following explanations of content, Linda asked her students to respond to the ideas and concepts in short written responses. Verbal and written questions were posed by Linda and students were encouraged to offer their thoughts on the matter which they did rather infrequently. Students were required to read texts in an active way to weigh up pros and cons to problem-solve and to interrogate opinion particularly within themselves by questioning and answering themselves to be able to make decisions.

5.3.2.4 Reading Linda's constructions of critical thinking in the semi-structured interview transcript

Linda claimed that it was ideal to have observed that particular lecture because it was the next section of work that appeared in the study letter, and it lent itself to critical thinking. During the interview, Linda was able to identify some of the enactments once I had said which ones I had identified. I had a sense that there was a little reticence to express what the enactments were out of a concern for being 'incorrect'. Linda did not pay much heed to identifying enactments of critical thinking in the lecture recording, but focussed on what she considered critical thinking to be comprised of and factors influencing it. After the interview had opened with a discussion about identification of a few enactments of critical thinking in the lecture, it shifted to a more generic conversation about what critical thinking could be. She spoke of the cognitive psychology characteristics of critical thinking. For most of the interview, the process of knowledge-building was described as critical thinking. The lecturer offered experiences of critical thinking which had not been evident in the observed lecture, because shortly after the interview began, she viewed a few minutes of the DVD recording, and then disregarded the DVD, and focussed on what she believed CT to be. She assumed a great deal of responsibility for the success of students in the module; perhaps too much responsibility. She said that when critical thinking occurred inside of academia it was a lecturer's responsibility to exercise it.

Linda carefully and repeatedly explained that the first step in critical thinking was cognitive conceptualisation using visual stimuli, images, diagrams and charts to present facts and introduce concepts. She said it was both the lecturer and students' responsibility to think critically. It required an understanding of disciplinary knowledge and concepts to which one added experience from school, life and from other study. She said the lecturer was responsible for posing questions of students to guide them to new thinking. The questions the lecturer posed should be thought-provoking' she called this 'constructing parts of knowledge'. Linda claimed that the students would then need to connect the ideas and knowledge and discover new information; the onus was on her to guide the students to explore their thoughts by means

of the activities used in this lecture. The learning of new knowledge required stimuli and theory which would then be amalgamated, altered and possibly assimilated. When Linda spoke of amalgamating, integrating and synthesising new knowledge, she did not explain what would become of the thinker when the new knowledge, gained through being open-minded and rational, did not find congruence with old knowledge. It appeared as if she assumed that all thinkers would be compliant with changing their thinking to create new knowledge. I wonder if the creation of new knowledge will prevail regardless of whether old and new knowledge find congruence with one another?

Linda felt problem-solving, decision-making (doing the right thing) in life and in the discipline, guided by the right questions was central to critical thinking. She said decision-making does not match fully with critical thinking but is a component of it because critical thinking involves more in-depth, cognitive processing. Critical thinking was equated to being rational, using reason, questioning oneself. Linda named rational, well-reasoned thinking and responses (written and verbal) as central to critical thinking. The idea that one should problem-solve, make decisions and think critically would be best served by using steps to guide thinking. The process of using steps or a methodology would be iterative, cyclical, and reflectively applied to a discrete set of concepts. She elaborated on the process to be used for thinking critically saying an heuristic such as a SWOT analysis, would be an example of how to exercise critical thinking. She stated on many occasions about removing emotion from critical thinking, which may explain her use of a word 'rational' decision-making. She also stated that critical thinking did not always occur deliberately by means of the use of heuristics, at times it might be coincidental in teaching and learning. I did not observe this, but it was part of her conversation about critical thinking.

Linda explained much of what she thought about critical thinking by using the language of sociology, and more specifically the educational developmental psychology. Her ideas about critical thinking, were couched in the language of sociology and adolescent developmental psychology, mostly about how it was formed through constructing knowledge. Her explanations were mainly about how she led students to new thinking. Linda's CT was said to be a variety of open-ended endeavours. However, the pedagogy showed Linda to structure the lecture so that she was completely in control and thus she did the CT for the students.

> *You cannot think of critical thinking as a definite label. We have to because as academics you're taught to do that, and you have to teach other people to think critically, so you have*

> *to label the concept. So unfortunately, we think of it in terms of labels and what it is in academics, but I think human beings in general start to think critically ….* (Linda)

She spoke about where critical thinking was learned in the wider world and to some extent in her youth, and then mainly about how and why it was useful.

5.3.2.5 Purpose of critical thinking

Linda viewed and valued critical thinking as a pursuit outside of academia, she had experiences of critical thinking which she believed required maturity-of-thought which could improve with age and it was then equated with wisdom. Linda's view was that learning critical thinking in one area of life or academics would be useful in other disciplines and the skills acquired could be applied to new situations. More precisely, Linda said it helped to transform people because it would assist them in being more altruistic and improve critical thinkers' lives because it reduced risk; she rather presupposed that following steps for developing critical thinking would bring success. The altruism came about as a result of the rational, well-reasoned reasons for conviction about issues in, for example, society.

The purpose of critical thinking was not to arrive at one 'correct' answer but to explore options and be open-minded. Critical thinking was charged with shedding bias and subjectivity, changing perspectives, thinking differently, producing a cognitive outcome or an end product such as new knowledge or the changed perspectives themselves. She emphasised that changed perspectives were a key objective. Cognitive engagement and changing perspectives would produce new schemata on an abstract neuro-scientific level; an intangible product not necessarily assessed formally.

The main purpose of knowledge was to broaden horizons and use the information to recognise this in immediate environments in which students lived and worked, thus suggesting that CT might be transferable outside of academics. She stated it would be changed or altered thinking within the individual for the purpose of maturity and wisdom.

5.3.3 Gugu: Critical thinking and Performing Arts: REFLECTING WITH students - Think it, see it, experience it

5.3.3.1 About Gugu

Gugu was a discipline specialist with more than ten years of experience as a lecturer in HE, *sans* professional teaching qualification. A small group of students in their second year of study were present in the lecture. They were specialising in performing arts and this lecture covered music.

5.3.3.2 Knowledge against which CT was activated in the observed lecture

The performing arts study letter was registered as disciplinary knowledge. The module author did not specifically use the term 'knowledge' in the study letter but listed the content to be covered in each unit: e.g. Introduction to Music - time signatures, rhythm and pulse, singing and performing songs in rounds, reading music in the treble clef. Disciplinary knowledge concerning the outcomes was clearly articulated. The students were to cover the knowledge that would enable them to play an instrument with some level of competence. The arcane nature of music called on theoretical, performance (explicit and tacit knowledge) and aesthetic knowledge in listening to and improving performance. Those were the outcome of this module.

5.3.3.3 Critical thinking in Gugu's observed lecture

Gugu's epistemological and ontological views of knowledge resided in many places – reading academic literature, in musical scores, experiencing, observing and listening to music at performances. The knowledge also resided in other learned academic colleagues who were invited to be present in the lecture room. The knowledge could also be found in the act of performing music so this would require a cognitive and practical knowledge to understand and perform musical pieces respectively. Gugu's belief was that knowledge resided innately to varying degrees in some humans and that it could also be learned. As in Mathematics where correct math problem solving was evidence of critical thinking, the evidence of CT in this module, was found in the accurate music execution or performance. Gugu viewed that as critical enactment. Gugu spoke confidently about where disciplinary and pedagogical knowledge were located in her module. Gugu used all of the resources described above to provide students with a multifaceted approach to teaching and learning critically.

On the evening before the observed lecture, students had attended an orchestra performance. Prior to the performance the students had been given written questions which then became the focus of the observed lecture discussion. At the start of the lecture, Gugu directed students to resources in a planned and co-ordinated fashion and precisely described the knowledge and outcomes. Gugu had planned clear phases of the lecture.

In this lecture, Gugu employed frequent and varied questioning techniques. Students were given the latitude to discuss amongst themselves and formulate verbal or mental responses to questions. The participant was encouraging and supportive. The expectations of the standard of responses, were clearly conveyed in Gugu's use of vocabulary and sentence construction in

providing guidance and feedback to the students. Gugu invited individuals to participate in the lecture and she elaborated and extended ideas using real-life examples. She asked the students to engage their previous experience, recall and imagination in answering questions. Gugu elaborated on some of the instances of recall e.g. to help students identify elements of musical theory or imagine what was required of a musician who performed in an orchestra by referring to the performance of the previous evening. The discussion was centred on the aesthetic and theoretical elements of the orchestral performance.

At times, Gugu raised questions to which students were not given the opportunity to respond (they were prompts for thinking) and at times students asked questions of Gugu. Two students expressed their thoughts without prompts and they were given the opportunity to complete their thoughts about what they had learned during the live performance. Small groups of students were encouraged to verbally co-construct ideas about musical performance in the lecture, which provided plentiful opportunities for exchange and feedback between participant and students. Gugu placed responsibility for interaction on the students. Students were challenged about statements and choices they made to develop their knowledge of the discipline and the approach to their own way of learning.

Gugu engaged students in a variety of activities, and she invited other lecturers to contribute to the lecture for enrichment (they offered comments, posed thought-provoking questions). The collegial approach had the effect of demonstrating co-construction of knowledge to students and colleagues – a genuine invitation to participate and perform. Gugu was aware of varying levels of ability, interest and motivation amongst the group members, consequently, they were drawn into the lecture by means of varied questioning and activities. She set high expectations and gave structured comments, questions and information on how to achieve them. A comprehensive explanation of how enactments of critical thinking served the acquisition of knowledge and its application in performing music is given below.

Gugu signalled clearly who was to be involved in critical thinking. In a different phase in the lecture, one characterised by theory, students were required to identify elements of music theory while listening to audio clips of classical music, similar and different from the classical music heard at the live performance. Gugu covered a series of previously learned, and new musical notation and elements. She elicited responses by asking questions and at times, pointing out more complex parts of the music. At times, the students were asked to contrast the music or parts of the genres of music they heard and to describe their notice verbally. The

lecture focused not only on the music nomenclature but also on the instruments and musicians in the musical performance of the previous evening. Gugu maximised lecture time by setting quizzes for students to complete independently once the lecture was concluded.

In the final phase of the lesson, Gugu required students to read musical notation in preparation for performance which would occur in future lectures. The students were required to participate by clapping the musical notes that were displayed on cards at the front of the lecture room; this is where Gugu drew together theory, student experience and practical application. The physical task of reading and clapping musical beat and rhythm was punctuated with extracts of musical pieces. There was auditory assistance from Gugu who demonstrated how to do the tasks, especially because the musical notation arrangement became more complex when additional cards showing more varied musical notation were added to the practice chart wall display. There were also references given to alternatives in musical scores; Gugu referred back to the orchestra discussion about how music writers have created variations in arrangements for musical pieces played by sections or soloists in the orchestra. There was balance in the cognitive, affective and psychomotor knowledge coverage with a good mixture of knowledge sources which Gugu had indicated were important because they formed the visual and auditory stimulation needed for critical thinking. Each step in the lecture was curated carefully to elicit CT from students. Gugu exercised CT with her students in a unique pedagogical structure not seen in other modules.

5.3.3.4 Reading Gugu's constructions of critical thinking in the semi-structured interview transcript Gugu in the interview

Gugu watched the first few minutes of video footage and then began speaking about the enactments in turn. Gugu indicated that the students had not experienced an orchestra performance response work before (she seemed to think they had not done this kind of task at all), and she was not sure how they would respond; instead, she said she was ready to be flexible and be guided by the student responses. The students were confident, mature and engaged in the lecture. Gugu required students to engage cognitively, physically and affectively by utilising still images and musical clips which had been prepared prior to the lecture.

In this module, Gugu tackled teaching the language of music to students because it was central to understanding theory and its expression related to critical thinking. The language of the discipline was found in musical scores – the language of the discipline enabled the students to describe the music aesthetically, and analytically, recognise the theoretical components, and

perform it physically. Some students already knew how to play a musical instrument; they then needed the language of the discipline to be assessed formally in the module. Firstly, to develop music theory, Gugu worked on the aesthetics of listening and performing music; secondly the students were exposed to musical performances in recorded and live formats, and thirdly Gugu taught students the vocabulary of Western-style music as required by students for teaching the school curriculum. She stated the intention was for the students to co-construct ideas about the musical performance in the lecture. She indicated the importance of honest responses as being beneficial and it was her opinion that the students had responded to the discussion in a mature fashion. In the discussions, Gugu insisted that the students should justify their claims in verbal and written responses which she explained as the reason for asking 'why' questions. A series of questions were used to tease a response from those in the lecture room.

Gugu's audio clips were varied to engage students with contemporary and familiar pieces and then she moved to lesser-known pieces. While students were engaging in the physical music-making, they were encouraged to explore their feelings about how the music production made them feel. Gugu utilised the time within the lecture to help students progress in multiple aspects of learning music at once as well as how to teach it in schools.

5.3.4 Ali: Critical thinking in Mathematics: THINKING ALONE - It's black and white

5.3.4.1 About Ali

Ali was a discipline specialist, a lecturer assigned to lecture fundamental mathematics to students who were in the 1st year of an undergraduate degree programme. Ali's academic qualifications were in the area of mathematics and physical sciences. He did not hold professional educator qualifications and had spent fewer than 5 years in the higher education environment.

5.3.4.2 Views on knowledge against which CT was activated in the observed lecture

The mathematics study letter (SL) (institutional document) was to be focussed on fundamental disciplinary knowledge. This module was lectured to third-year students. The module author indicated that the module would cover "increased Mathematical knowledge and pedagogical skill, knowledge of spatial … apply knowledge, new mathematical knowledge". Included in the references to knowledge was the listing of content knowledge e.g. algebra, linear relations using words, ordered pairs, tables of value, graphs and equations.

Ali's relationship with knowledge seemed to be that of the knower attaining knowledge that existed outside of the individual. It was to be gained through study, reading, research and experience of social, schooling and physical environments. He stated how some student knowledge was missing due to experiences in life which permitted little exposure to mathematics. Ali indicated that knowledge was increased over time, particularly through exercises and practice in mathematical situations. There were two entries for CT in the institutional SL for this module.

5.3.4.3 Critical thinking in Ali's observed lecture

On the day of observation and recording, there were approximately sixty students in the lecture venue. Ali's lecture included visual stimuli for learning and understanding. The visual stimuli included practical demonstrations, slide presentations showing procedures for constructing and measuring angles and hand-drawn diagrams to demonstrate processes and concepts (construction and measurement of two-dimensional shapes and angles, using ruler and protractor). He explained how accuracy in measuring and drawing was necessary and expected. He stated that the steps in each process had to be explained and demonstrated to students to improve their understanding. The students were provided with written examples of mathematical problems scribed on the whiteboard in the lecture room to solve under the supervision of the lecturer. The lecturer asked questions of students on a few occasions, and he encouraged students to ask questions. About three students asked questions. The lecturer guided students through the steps of the problems he had presented for them to solve. For problem-solving in mathematics, he used acronyms to demonstrate the order of operations needed for compound operations and for the solution of equations. He also provided alternative steps for some of the procedures so that students could see how to approach mathematical problems in different ways. The students were given a set of written problems to solve on their own during the lecture and the solutions to each were explained. The lecture pedagogy was largely lecturer-led, punctuated by a few invitations to the students to pose questions about the explanations. He stressed the importance of accuracy in measurement and construction and used humour to lighten an otherwise lethargic mood in the room.

5.3.4.4 Reading Ali's constructions of critical thinking from the semi-structured interview transcript

Some of the experiences of which Ali spoke he said were from the perspective of a private maths tutor for young learners. During the interview, Ali insisted on explaining how the

operations he had demonstrated in the lecture were important; the identification of specific critical thinking enactments was not forthcoming in the interview discussion perhaps because Ali had already declared at the start of the interview that all of what he did was critical thinking.

> *Yeah, I would definitely say every section we highlighted [in the video footage] I was basically thinking critically [about how he taught mathematics]* (Ali)

Ali appeared unclear about whether the critical thinking I was asking about should have happened on his part, or on the part of the students, although I probed and prompted to encourage the discussion. Ali did not discuss the pedagogy of critical thinking directly but alluded to CT in different ways which I did not expect. I listened and deduced the following: a most noticeable point about Ali's comments was that he seldom verbally assigned responsibility for CT to either student or lecturer. On the occasions he assigned responsibility he seemed to be referring to the lecturer being responsible for CT. He seemed to imply that although the students were required to gain the knowledge, he needed to teach it to them. Ali was not explicit about who was responsible for knowledge but his actions in the lecture room showed that he led the way. He stated that some students really struggled but he seemed not to move beyond that explanation to the discussion about the specific forms that critical thinking took in his lecture. Being not fully convinced that I had analysed the interview transcript thoroughly enough, I returned to the audio recording and listened again.

Without saying so, it was apparent that Ali took the responsibility for critical thinking entirely onto his shoulders. He assumed a self-sufficiency in silent thinking about mathematics.

Ali viewed critical thinking as something which could be taught, although he said there were occasions where number skills were so poorly developed among students[20] that placing more demands on students to think critically might bring negative consequences. He held that some students could barely grasp simple concepts and processes, let alone alternative ways of working with numbers. He preferred to speak about critical thinking as arising from environment and opportunity in a broader sense, rather than about placing the conversation in a teaching and learning discussion.

[20] South African mathematics and science results in school are extremely weak by international standards (The UNESCO Courier (2022).

He seemed quite pre-occupied with being able to explain mathematics concepts and processes to students in a manner that was clear to them. He was also clear that ending the lecture early would give individual students the opportunity to engage with him on an individual basis; in this way, he was encouraging student thinking. Ali also spoke of encounters with students who could proceed of their own volition with little assistance. On more than two occasions in the interview he said that critical thinking could be learned intrinsically and improved through deliberate practice. He was sure too that at times critical thinking could become a habit to the extent that it would be easy for one to do it without realising it. The critical thinking characteristics which were implied, rather than said directly, indicated that CT was about cognition (thinking) in the discipline, process (step-by-step), systematic, problem-solving exercise which necessitated practice. Ali said it was about evaluating and finding proof and evidence of ways of working with numbers. The participant explained critical thinking in relation to life-in-general rather than in the context of teaching and learning. Ali's approach to CT was contained within his silent thoughts of CT in a pedagogical situation. The CT was implicit in the lecture.

5.3.4.5 Ali's view of the purpose of critical thinking

When Ali spoke of critical thinking, he expressly said that its purpose was to help him think differently, find alternatives and to get results based on proof (disciplinary knowledge). Ali's only verbal claim to enactment was that it involved questioning by the lecturer. There was an explanation about how one arrives at being a competent mathematician, what should be, and what students should do in the learning of mathematics, but little was directly explained about how critical thinking is directly related to Mathematics observed in the video recording. When prompted to say what purpose critical thinking served, he replied;

> *I don't know, but I feel that you got to encourage people to survive because the [education] (my insertion) system has been created. It's there, so you have to figure out how to move around it or within it. So, you wouldn't use critically, you can use critical thinking, but not much.* (Ali)

Ali alluded to the idea that critical thinking was a bit superfluous; the chief role of education is to learn the facts. The epistemological and ontological views of knowledge in Mathematics were those that influenced how Ali achieved the intentions of the disciplinary knowledge that was declared in the SL. The same views influenced the design of pedagogy for CT or the

apparent lack of it. It seemed that Mathematics was something to be shown, modelled, followed and executed correctly. I deduced from the interview transcript that critical thinking was the act of deciding which formulae to apply, which order to apply to solve a number problem, and how to measure and follow a reasoning in the process to achieve an accurate outcome.

5.3.5 Reflections across the participant data

5.3.5.1 What knowledge sources are named as necessary for critical thinking?

Sheldon and Linda shared similar ideas on the sources of knowledge that were required for each of their social sciences modules. They named traditional sources usually encountered in History and Geography respectively. They held very similar relationships with knowledge in their respective disciplines. Each of the participants indicated indirectly that as discipline specialists, they were at the heart of the knowledge and were, therefore, the catalysts for activating critical thinking although each one went about the enactments (pedagogy) in different ways. They also all indicated that variations in student knowledge with influences ranging from the innate, to the learned, to the lived experience and common knowledge were valuable and necessary in achieving critical thinking. All of the lecturers said that they were aware that the knowledge experiences of students were varied. Linda and Ali expressed that a deficit of knowledge and experience among students were the reasons that they were sometimes pressed to focus on teaching disciplinary knowledge rather than on critical thinking. They tended to control or omit critical thinking from their work in favour of building disciplinary knowledge or engaging CT if there was time to do so. Sheldon and Gugu were less focussed on knowledge deficits and worked towards CT by planning and eliciting CT, and modelling the expectations for CT.

5.3.5.2 How knowledge types and knowledge sources are important or less important in critical thinking

Both Linda and Sheldon insisted on prior knowledge of students as being important for learning but for differing reasons. Linda explained that it was a building block and anchor on which to build new disciplinary knowledge (not necessarily to build CT) itself. Sheldon viewed prior knowledge as complementary to disciplinary knowledge, and to the endeavour of learning and thinking critically. Linda explained critical thinking as the act of building new knowledge in the discipline, while Sheldon viewed knowledge as a means to effect critical thinking.

Ali felt that his module was created to assist students, who were not pre-disposed or exposed to mathematics in school, to become proficient in the discipline so that they could teach general mathematics to learners in classrooms. His focus on CT seemed less prominent for fundamental mathematics teaching than the other more overt approaches employed for social sciences or performing arts. Ali believed that student deficits in mathematics were his to remediate. He did this by whole-class teaching and invitations for students to approach him individually so that they could discuss their needs in understanding concepts and processes. He seemed focussed on fulfilling the purpose of the module - the students should understand the fundamental disciplinary content. Knowledge transfer for use in Mathematics teaching preparation was key in this module. It was interesting to think about how Ali explained that critical thinking was intrinsic in achieving accurate mathematics problem-solving, in contrast to it being a tool for furthering thought about a wider variety of ideas such as was found in, for example, humanities modules. Ali spoke of critical thinking as a task to be undertaken in the sense of mathematics and as a necessity for being successful in mathematics. Although the module study letter indicated that there was to be a critical analysis of content, he did not articulate critical thinking enactments in the lecture and interview in terms of pedagogy but rather as a phenomenon that could be understood better when he explained it in terms of life-in-general. Ali indicated that CT involved problem-solving and practice, trial-and-error and it was reliant on disciplinary authority and approval in the field. Ali who mentioned critical thinking seldom, had written it only twice in the study letter for the module. A consequence of approaching students in the deficit model approach to teaching and learning meant he took on the responsibility for activating critical thinking in ways that were different from the explanations offered by other lecturers who taught other modules.

In the case of Ali, who stated that he used critical thinking in every lecture (in his own head), critical thinking may have been formed by two factors: he did not have the: a) professional teaching qualifications [21] or b) experience to elicit critical thinking from students. The second factor was his view was that critical thinking was applied in solving mathematical problems and in life-in-general, and that that thinking occurred inside his own mind where it remained

[21] It is an expectation at the national level that lecturers who lecture modules are qualified in the HE teaching and learning. However, lecturers in SA higher education are not necessarily professionally qualified educators. Therein lies an assumption that can potentially place lecturers in a position to be ill-equipped to know that they are to meet mandates such as CT.

invisible. He indicated that he assumed responsibility for leading in learning. His explanation and pedagogy for CT focussed on content, demonstration, individual attention for students, and questions and answers, and the solution of mathematical problems. His repertoire of enactments of critical thinking appeared to be narrow, and he felt that the student could apply critical thinking and reach some level of competence if they tried and practiced. While he assumed responsibility for conveying knowledge and CT, he also stated that CT is developed by inclination (will) and practice.

Ali's explanation and pedagogy were quite different from the way in which Linda believed she constructed and enacted critical thinking. Linda, a professionally qualified educator had the skills to scaffold teaching and learning experiences for critical thinking. She prepared thoroughly for the lecture. She led strongly in constructing the knowledge and thinking in a way that seemed very intense for the undergraduate level study; her approach seemed more suited to a high school context. Knowledge aside, the pedagogies of Linda and Ali respectively, created very different experiences of critical thinking for students. Ali and Linda appeared to be at opposite ends of the spectrum for the intensity of planning for lectures and for explaining deliberate enactments for critical thinking. The difference between Ali and Linda, is that Linda had the skills to develop student thinking directly, while Ali did not show those skills. Ali worked alone, in a bubble, emerging only to meet students individually to try to make a difference to their progress and critical thinking, or problem-solving skills. Linda constructed for the students a means for the parts that constituted the whole, to be learned. A notable point is that neither lecturer called on students to participate in their lectures in an overt way that was designed to encourage open-ended critical thinking opportunities.

In contrast to Linda's discussions of enactments, Sheldon, also a social science lecturer created critical thinking opportunities in the lecture by preparing multiple stimuli - reading, cartoons, photographs, videos and questions. Students were encouraged to interact largely with the lecturer and there were some instances where they were able to interact with peers. Sheldon's professional educator qualifications and experience were evident and quite well suited to slightly lower NQF levels and a little less so to the rigour required in NQF Level 7. Sheldon was successful in creating a lecture atmosphere that encouraged the development of the skills required by an historian; those being, open debate about controversial topics, creating safe spaces, building trust and building student confidence. Sheldon claimed the strategies encouraged critical thinking. The critical thinking encountered in Sheldon's lecture was for

academic disciplinary and pedagogical knowledge development, and if students chose to do so, they could make an emotional and personal investment in their study of the module. The development of disciplinary knowledge and pedagogical knowledge as exercised by the lecturer in his pedagogy was a demonstration to the students of how pre-service teachers would be carrying out the same tasks in their teaching and learning in their classrooms. It required the lecturer to exercise CT in pedagogy with pre-service teachers. Sheldon suggested that P-STs found it difficult to move between being scholars of history and professional practitioners with a responsibility to address CT for themselves and their learners in schools.

At the start of the interview, Gugu whose knowledge type for performing arts (disciplinary subject knowledge) (see Appendix A), was tentative about her understanding of the definitions of critical thinking, but she identified many enactments during the interview. It was noticeable that Gugu, who used the term 'critical thinking' most frequently in the interview, was the same lecturer who wrote the term the most frequently in the study letter / institutional documentation (declared curriculum). As the interview progressed, she became more confident about identifying and discussing enactments of CT. She was a strong disciplinary expert who, despite having no formal professional educator qualifications, was able to design the lecture to demonstrate many instances which she claimed as critical thinking. In the lesson observation, the students were expected and invited to participate. The expectations for CT were made clear through the issue of a series of instructions on how the tasks in the lecture would be structured and what outcomes were required. As in the case of all the lecturers, questions to students (verbal and written) formed a considerable portion of the lecturers' enactments of CT, although not all of them expressly identified the role of questioning as a form of CT. The experiences of music study were rich and authentic and deliberate critical thinking opportunities.

In Gugu's lecture, students were offered disciplinary knowledge from multiple sources. The sources sought to provide the best possible experience for students to work in groups and engage independently and with other students. Gugu involved colleagues in the lecture to enrich the input and discussion. She was very well-versed in the discipline. Gugu did not use the learning from a second discipline to design the lecture for critical thinking. Gugu was able to give a detailed account of what she understood to be critical thinking, and she was able to identify what she saw as critical thinking enactments in the lecture observation. She was skilled in structuring the pedagogy even though she did not have a formal teaching qualification. The lecturer used different examples to illustrate her constructions of critical thinking. Gugu spoke

of CT in relation to learning music theory, that is, knowledge of musical scores and musical notation, critique of performance and applying it in physical musical performance. She used a variety of suitable resources to enrich the student experience and was invitational in the lecture. Most of the responsibility for critical thinking was assigned to the students and she made it clear that a high level of engagement was anticipated. The level of critical thinking that she demanded of the students was significantly challenging. The critical thinking was required for developing different knowledge types. The students responded positively and maturely at a level that was appropriate to the NQF level.

5.3.5.3 What did the entries in the study letter (institutional) reveal about planning for critical thinking?

While each SL declared that CT was to be included in the module, Table 5 showed that the emphasis in Linda's module SL was to be encountered in achieving the outcomes, while in Sheldon's SL the entries were made in outcomes and assessment. That shows how the entries in the SL signal what one supposes will be present in the pedagogy according to constructive alignment principles promoted by Biggs (2014): it is argued that one should not assess CT if it is not a part of the aim and the content and the outcome. The absence of entries across all sections of the SL does not mean that the lecturer was not conscious of CT. However, it might be better taught by applying CT to all sections of the T&L process. Alternatively, it may be that the entries are not given much thought. Which purpose do the CT entries serve? Both of the lecturers had professional teaching qualifications, and each had taught their respective disciplines to high school classes, thus one would anticipate that their pedagogical design would take cognisance of the purpose of the CT and the way in which it would be taught and learned, affording the students the opportunity to learn in the way a pedagogue deemed most beneficial to them.

5.3.5.4 What pedagogical approaches did lecturers declare or describe as enactments of critical thinking?

In the lecture, Sheldon utilised approaches he had found effective in language teaching to stimulate imagination, inquiry and attention to detail. The lecture was structured to invite students to respond to written and audio-visual stimuli. The idea was to develop inquiry through attention to visual detail (in cartoons). It was accompanied by a large variety of resources, prior reading of academic literature and textbooks. Sheldon's approaches involved a combination of the lecturer engaging disciplinary and pedagogical knowledge, and student experiences and

prior knowledge, supplemented by academic content knowledge from varied sources. The combination was used in a planned way. He was invitational and he encouraged participation in discussion. He utilised the collective memory of not only disciplinary knowledge but also of common knowledge and lived experience. Sheldon was well-versed at incorporating natural curiosity with logical, well-reasoned thought and the reflective and evaluative thinking that he wanted students to utilise in History. He probed with the use of questions and did not shy away from the controversial disciplinary knowledge about segregation and apartheid topics, even when he knew that some students in the lecture held strong views about those topics. The student participation took place in a safe, well-regulated environment where trust and confidence were established. The lecturer structured the environment for students to develop the skills of an historian - imagine, interact, challenge, reflect, discuss and empathise. He also required students to form some kind of conviction within themselves about the work they were covering.

Sheldon displayed a commitment to developing student skills in the discipline. He also indicated that the students often determined where the lecture might go, and he regarded himself as both a leader and a facilitator in the lecture setting. Sheldon expressly stated that the lecture was deliberately designed to elicit critical thinking skills. He expected participation; he designed his lectures for participation; he invited participation; he used the structure to guide students to an holistic experience in which he and the students worked together, and students were able to lead to some extent. I was able to identify the enactments separately when I observed the lecture and during the interview discussion. However, I had to be aware that my presence as a lecturer of history who had taught that module previously was perhaps guiding me to what I imagined I might see. It was challenging to remain as critically distant as possible in interpreting what my eyes saw and my ears heard, as I was reminded by the words of Bratich (2018), that observation is not passive nor neutral – there is no such human endeavour.

Pedagogical design called on numerous techniques and approaches to teaching and learning of CT, which lecturers named to greater and lesser degrees. They were used in combination with lecturer actions which called on students to follow lecturer demonstration (some in a transference style) - engage in prior reading, think about written questions prior to a lecture, establish definitions, engage with multiple concrete and abstract resources from many knowledge repositories, follow modelled examples of content, use heuristics, and interact with the lecturer and other students. The lecturers used questions frequently, invited students to ask questions and there were those lecturers who probed responses from students who ventured a

reply. Some lecturers invited questions to be directed at them and they allowed students to ask questions of one another. Lecturer permissions for students to build confidence, engage, feel invited, contribute, receive confirmation, feel valued, be safe and respected were seen and named as ways of encouraging CT and spoken of in some cases. However, some of the interview transcript data showed ideas of CT to be explanations and demonstrations of how to think, carried out by the lecturer. In yet others, the students took part in the lecture and CT activities to greater or lesser degrees, dependent on the lecturer's willingness to relinquish control over the knowledge and lecture progression. The lecturers wanted students to engage but the level of invitation to do so varied. Some lecturers invited and expected CT and had success with student responsiveness, while others did so to a lesser effect. The latter created a difference in the levels of challenge that lecturers set for students.

Some lecturers said it was necessary for students to be cognitively present in the lecture. Other lecturers commented that the lecturer's presence, different from student cognitive presence, was necessary for CT to occur. The presence of the lecturer in an overbearing way does not guarantee CT and may even stifle it. Lecturer's presence does not offer a guarantee that students will co-operate. The tensions combining lecturer planning and student participation need to be in balance as described in the words of one lecturer who said it is good to let students,

> *lead a little* (Sheldon).

Having stated the above, the lecturers' comments showed where they thought CT could be manifested. Their views ranged as follows: in actions, in writing, in speaking and even in thought, so they did not discount the possibility that CT could occur (silently) in students. I was reminded that during the lecture observations, it was easy to focus on who was engaging and talking. I had thought the same in the lecture observations.

In the lecture observation CT, I noted that some students participated more frequently than others. One lecturer stated that the extent to which students should be permitted to participate must be within limits, perhaps based on time constraints. I gathered that in some instances the permission to participate seemed to be influenced by the lecturers' (authority figures') view of how much was 'fair'. One such instance was when a student, who was not South African, spoke a great deal in the lecture. The lecturer viewed this as the student being able to articulate critical thought verbally on the one hand, but not knowing when to give others a chance. The other

issue that arose pertained to the amount of time the aforementioned student's engagement was in relation to how much or little time they would take from the lecture that had to be completed in the stipulated timetable slot. I observed that lecturers' confidence in the discipline, and their confidence in discussing CT, seemed to correlate with their invitational levels. The participants' dedication, willingness and well-intentioned support of their students were evident in the lesson observations and spoken of in the interviews.

In the lecture situation, the extent to which the lecturer achieved the above was evident in whether they carried out the above as lecturers *alongside*, or *with* their students, or working *alone* or leading strongly, and doing the work *for* the student.

A caveat I issue is that a lecturer leading too strongly might be intended to be supportive, but in effect, it makes for complacent students. Also, the lecturer lead may not have CT as its focus, but rather knowledge or concept building, thus it can be difficult to distinguish between scaffolding of knowledge-building and CT scaffolding. As an example, lecturer learning FOR students appeared to be scaffolding more aligned to school T&L than to HE. By this I mean that the lecturer scaffolded the learning of knowledge rather than the CT about the knowledge. Encouragement of student-to-student interaction and the back-and-forth flow of enquiry and response, but largely lecturer-led endeavours were present in some lectures. Lecturer-student interaction flows and intensity levels, possibly influenced by lecturer personality and confidence, prove powerful in establishing whether or not, and the extent to which critical thinking is given space to occur. One of the lecturers was not in a pedagogical knowledge position to activate CT. We might say the lecturer worked ALONE and appeared not to enact CT in the lecture, because his pedagogy was based on a disciplinary transmission model of his own experience in HE. Pedagogy for CT was thus informed by experience of being a student who was required to attain the level of CT of the NQF Levels 7, 8 and 9. Another lecturer wished for student interaction on which to build CT opportunities. Two lecturers could articulate and enact CT with confidence but their student interaction levels were at opposite ends of a continuum of plentiful to barely noticeable from which it can be concluded that student interaction does not necessarily focus on CT. Lastly, in other instances, the lecturers saw themselves as disciplinary experts; one identified CT in the lecture and showed that it occurred WITH students while in the other instance, there was design and enactment FOR the students. The teaching and learning approaches of the lecturer signals what they are prepared

to relinquish and allow in the lecture in terms of sharing knowledge in such a way that CT can be enacted on it.

Certainly, a point of concern is that CT does not pay attention to the consequences of CT. It means that not only does a lecturer need to prepare for CT teaching and learning but it is also necessary to think about what is being set down for further encounters with CT. Adequate preparation and thought about CT will set the stage for future encounters for students and lecturers. The lecturer must have not merely a solid disciplinary base, but also the conviction and courage to engage from that base to bring about CT opportunities in the lectures.
The concept of CT being a phenomenon which could be learned and strengthened is considered by lecturers to be feasible, however, it is not clear how much learning and strengthening is enough, and even how many CT events constitute enough, and finally, whether that would occur within a discipline, or across disciplines. All of the lecturers spoke of CT as being applicable to everyday living, but this was an incidental mention with little explanation beyond the naming of where CT might occur. It might be said that lecturers could enact versions of CT, they knew it was connected to everyday living, but they were not clear how this was to occur. The outcome of not being able to articulate where CT is applied is a point to pursue because it signals some kind of need on the part of the lecturer that is undefined.
Traits of the critical thinker were mentioned in the data in relation to students, but none of the lecturers referred to these traits being present or important in their teaching and learning of CT. Here I am reminded that the lecturer is a critical thinker in the same way as a student is a critical thinker. Therefore, the same traits desired of critical thinkers, are necessary and more strongly anticipated in the professional lecturer setting. It was surprising that the traits were not mentioned in the interview data. It gave the impression that everyone was capable of CT and that it was an axiom that all could think critically. Alternatively, it was simply not discussed even though the lecturers may have had some knowledge of the theoretical views that traits are widely discussed in CT literature.

It must be asked whether lecturers can be confident that they know what CT is. Some expressed that they were not sure if they are going about CT in the correct manner; I could sense in these statements that they were not sure what CT standards they were supposed to be following or where the standards were to be found. It could also be noted that in the discussion about CT, lecturers spoke about CT as if there was another stream of ideas outside of the actual words of the interview conversation. The discussion moved between a discussion about pedagogical

incidents of CT spoken of directly in the interview, and then there were also odd instances where the lecturers spoke of 'they' and 'it is expected' that CT is implemented in teaching and learning. The lecturers' concern was for their pedagogy rather than the recording of CT in institutional documents or in the theorising about CT. At this juncture, I would suggest that verbalisation about CT was not entirely an indicator of what lecturers knew about CT, instead perhaps they knew more than they could say and that they enacted CT more than they talked about it.

5.3.5.5 The purpose of the module guides critical thinking

I use the example of the performing arts module to illustrate that CT can be influenced by the declared purpose of the module as set out in the module SL. The performing arts modules were intended to have disciplinary knowledge outcomes. In reality, the module had very strong pedagogical requirements also because some of the students had not played an instrument prior to studying this module. The lecturer had to effect critical thinking in both areas (disciplinary and pedagogical). Gugu's disciplinary learning was specialised in the field of Music, while a professional teaching qualification had not been obtained. She was confident that CT was successfully engaged. Gugu had many years of HE teaching experience and was articulate in the expression of what she believed critical thinking to be comprised of. Gugu invited student participation. Gugu's stated that the observed lecture group surprised her considerably with their involvement in the task she had set for them. She knew that group interaction was where the power of critical thinking could be most beneficial. Gugu expected students to engage in CT because that was a requirement of HE. She saw the value of student input and engagement and the relevance of her own knowledge to help individual students build a reserve of knowledge which could be used to critique their own knowledge and experiences. She hoped that would translate into their teaching in schools (4.3.5.3). All of the lecturers expressed that CT was important for the students in their roles as prospective teachers in schools.

In the interview data, the frequency of lecturer-mention about the importance of assessment, led me to believe that critical thinking was frequently about a tool for success in assessment as much as for, in Sheldon's opinion, among others, for success in their teaching roles in schools. In the interview transcripts it was seen that lecturers either:

A) remained at the centre of the knowledge and designed pedagogy for critical thinking which they kept close and radiated outwards to their students (ALONE and FOR).

a) because they trusted that way, or knew no other way to do so
or
b) because the students did not radiate the desired responses back to them, they took up the responsibility to do so themselves (compensation)

B) released thoughts outwards and allowed students to radiate thoughts towards them and between peers (ALONGSIDE and WITH).
To clarify, it was not that the lecturers expressed that the CT was dominated by the preparation of students for teaching roles, or that it was purely for assessment. This focus was a niggling (underpinning) presence which occurred in the data.

5.3.5.6 Critical thinking and the influence of two disciplines
Linda created a structured environment. I observed few outward opportunities for the critical interaction found in Sheldon's lecture. I had to consider carefully what I was observing and listening to. I viewed the DVD footage alone, and marked points at which I could observe or hear what I thought CT might be. In the interview, Linda paid little attention to viewing the critical thinking enactments on the DVD recording of the observed lecture. It was possible that she had little time to attend to the viewing of the DVD as we had agreed, but it was not of great consequence, I knew that all participants were pressed for time in a high-pressure environment. In the interview, Linda had well-formulated ideas, largely informed by a cognitive psychology approach and explanation (Piaget and Vygotsky), about the CT and how it could be viewed and taught. During the lecture observation, Linda held the discipline knowledge cards for the social science module close to her chest while she led students through heuristic-like strategies for thinking. She stated that the main purpose of critical thinking was to open-up thinking to admit new ideas to add to existing ideas. The lecturer knew how to structure cognitive progression in learning. It was noticeable that a lecturer who was preparing pre-service teachers to be independent would structure and control critical thinking opportunities to the extent that she did – the students saw more demonstration than an opportunity to experience. Students were led rather than given free rein. Linda displayed a heightened awareness of her students who she said experienced barriers in the task of learning because of disadvantaged backgrounds. Disadvantaged backgrounds could mean a number of things; Linda referred to a lack of English-language proficiency; socio-economic deprivation, single-parent homes, inadequate housing, food, clothing; poor educational experiences; low scores in standardised assessments, illness and much more. As a lecturer with geography and educational psychology

and sociology degrees, she was very alert to student struggles. This meant that she used a strategy of doling out chunks of knowledge and linking them through a series of visual stimuli (diagrams and still images). She guided reading and writing tasks in the lecture room and sometimes answered her own questions. The lecturer was thus able to control the learning pace and student understanding while at the same time finding out what the students already knew and understood. The critical thinking was interpreted as being the thinking that students used to piece together the parts of a whole. The lecturer's motive for the enactments of critical thinking was driven by the lecturer's belief that using heuristics to construct knowledge was a safe and helpful way to structure new thinking, and that the new thinking constituted critical thinking. The critical thinking that was identified by the lecturer as critical thinking was focussed more on thinking that occurred in the cognitive process steps than in the opportunities of open-ended critical thinking. The remarkable point that surfaced in this case was the use of a second discipline of educational psychology to complement the work of the main module that was being lectured in the observation.

The advantage of guiding so closely resulted in students having the 'right' knowledge to draw on for assessment purposes. The expectation placed on the student was to construct a whole from the pieces of knowledge that they already had, that is, using their prior knowledge and experiences and the exposure to the new knowledge via books and other media. My observation was that the lecturer constructed many pieces of the whole for the students. I was not convinced that they were doing this themselves because Linda led prominently in the lecture – an antithesis of the intention of critical thinking expressed and encouraged by Sheldon. The lecturers shared a common launching pad for their modules (similar relationships to knowledge and similar ideas about where knowledge resides) however, their pedagogy for critical thinking followed different directions guided by the envisaged outcomes that they had stated CT was to achieve.

5.4 Themes

5.4.1 The planning for critical thinking

Using document analysis, the planning for CT shown in the study letters (institutional documents) per module indicated that lecturers wrote the entries for critical thinking a) in only some sections of the study letter or b) across the study letter sections or c) clustered them in the content and assessment sections. The varied patterns of entries for CT in the SLs suggest

that CT is not a co-ordinated requirement at institutional or individual lecturer level despite being directed for inclusion for planning by the institution. This is reason for considering how the conceptual planning for CT affects pedagogy and what can be said of the conscious awareness of the need to attend to this national mandate of CT. A first notice is, that -only one participant made reference to the CCFO status of CT required at a national level. It is not clear what the policymakers intended CT to be comprised of but it would seem that the lack of mention might be a lecturer omission or possibly that the information does reach lecturers from policymakers. The second notice is that the institution appears to have a directive role of instructing the inclusion of CT in institutional documents. The direction does not include the monitoring, audit or insistence on declaring, or support of, the pedagogy used in achieving (enacting) CT. This matter is taken up in greater detail in a later analysis.

5.4.2 Naming of critical thinking

The lecturers provided a variety of names of CT and they were able to describe their CT actions (enactments). Lecturer confidence in offering identification and description of enactments of critical thinking was tentative in some cases, while in others, how to design teaching and learning to ensure its presence, reveals greater clarity and confidence. There were instances where lecturers could identify many enactments of CT, others who could explain what CT was as seen in the video recording of their lectures, and those who could not identify in the same way as others or explain, other than without using the language of the pedagogy.

The lecturers' invitation to, and expectation of students to think critically was evident. Some lecturers invited and expected CT and had success with student responsiveness while others did not, despite equal levels of anticipation. Lecturers expected and wanted students to engage. All of the lecturers made comments about not being confident about what CT was because it seemed to be an elusive term. However, none of the lecturers spoke about the recording of CT in the institutional documents. Additionally, it emerges that lecturers seem to more be confident that they know what CT is, but confidence about how to go about CT is lower. Notably, their comments related to issues of pedagogical implementation of CT, and not to theorising about CT. It was, however, surprising that some lecturers seemed to demonstrate more CT in enactments than they could verbalise in the interviews.

Across the data, the definitions of CT suggested some expected ties with disciplinary characteristics e.g., inductive and deductive thinking in relation to sources in both social

sciences modules. Justified, true belief as critique of worthy knowledge, emerged as a prominent feature of CT in History; critique was required in performing arts, and reflexive thinking was required for Music and pedagogical knowledge type modules where it was spoken of synonymously with CT. The ideas about what constitutes critical thinking in different disciplines are as follows:

- some CT enactments targeted cognition, affective and psychomotor domains, such as in the instance of Music, or in other combinations across other modules.
- Interestingly, during the semi-structured interviews, it is recorded that two lecturers discussed the matter of CT in terms of their second discipline as studied in their undergraduate degrees. They did not discuss CT only in terms of the module (disciplinary or fundamental) (see Appendix A) that was selected for this study.

Another interesting aspect of the naming of CT was that since some thought that CT could be a cognitive activity, it was said that students might not be given credit for the depth of their cognition; students may simply have been less inclined to verbalise their ideas in the lecture. It was impossible to know exactly the extent of knowledge and CT the students brought to the lectures because lecturers thought that CT may have been silent within the student on an individual level, or through overt verbalising among others. Where it might have seemed that there was a complete lack of engagement on the part of some students, the lecturers acknowledged that there was some evidence of silent cognitive and affective engagement to be seen in the written tasks that emanated from CT in lectures. If CT was more than thinking differently, did it mean it had to be verbalised, examined and contested before it was considered to be CT? It would be of benefit in determining how much and what frequency of CT in a lecture would be considered to be enough.

5.4.3 The second discipline as the complementary informants for discussing and enacting critical thinking

In the data of two participant lecturers, the second discipline of the lecturer (undergraduate and postgraduate degrees) emerged as complementary informant for discussing CT in the semi-structured interview transcript analysis. Examples of this are found in the social sciences where both lecturers drew on their knowledge of their second discipline to describe how critical thinking was enacted in lectures under observation in this study. Even more surprising was the finding that the second discipline lent strong aspects of teaching and learning design for CT in the lecture. For example, one social sciences lecture contained elements of first language

English teaching approaches and techniques. In the other social sciences interview data and lecture observation, it was clear that sociology and educational psychology were strongly present in the pedagogy. The second disciplines were used in the rationale of critical thinking enactments too. It is surely a unique finding as I have found few empirical study reports that refer to these points.

5.4.4 General knowledge and lived experience in critical thinking

Informed by data gathered in the lecture observations and in semi-structured interviews, it has been established that different forms of knowledge are drawn upon for CT. The main knowledge form against which CT is activated is the registered knowledge type which may be one of five types of knowledge prescribed for the P-STE curriculum in SA (see Appendix A). This is perhaps the anticipated largely unremarkable set of findings. However, among all the participants, the presence of general knowledge and knowledge gained through lived experience were considered significant for CT to occur. The researcher did not solicit this information from participants, but all of them indicated that general knowledge and common knowledge were required for critical thinking. General knowledge and lived experience, lecturers claimed, were central to CT opportunities. Surprisingly, there were two instances where the lecturer mentioned that a deficit in knowledge jeopardised CT opportunities, especially in a fundamental module that had been introduced to the institution to address gaps in student knowledge arising from systemic deficits in the teaching of Mathematics in SA schools.

Having established that general knowledge and lived experience are important, this data was brought into consideration along with document analysis data, interview data and observation data from pedagogy to illuminate understanding of what CT is being activated against.

5.4.5 Pedagogy for critical thinking

This chapter has set out an extensive discussion on the observed and declared pedagogy for critical thinking. The pedagogy for CT is varied according to the knowledge covered in the module, and the planning and implementation of the planning by the lecturer. The implementation of the enactments of critical thinking is driven by a variety of factors. They are the lecturers':

- views and relationship with knowledge (who is the owner of knowledge and where knowledge resides – books, experts etc)
- views on what CT is

- awareness of CT as a necessary component of teaching and learning
- skill in designing pedagogy for CT
- view of who should lead in teaching and learning and CT in the lecture room
- perception of the purpose of the module.

The listed factors are common in discussions about pedagogy. In the interviews, lecturers were able to provide explanations of what they believed was CT. They were more tentative about their own pedagogy for CT than they were about naming CT, and their discussion centred on pedagogy rather than on the philosophical and theoretical aspects of CT. The matter is noteworthy because it suggests that awareness and preparedness of lecturers for CT in P-STE is being considered at a pedagogical level. Does pedagogy receive the same level of theoretical consideration as the theory that underpins a discipline?

5.4.6 Purpose of critical thinking

Lecturers suggested different purposes for CT which ranged from claims that it changes perspectives, develops considerate, good (ethically) students who are mature and wise and who can make informed decisions. It was viewed as a form of decision-making and problem solving; in other words, CT could be transferable to everyday life and most referred to it as being necessary for assessment purposes. CT was also viewed as proof of being able to think more precisely about almost anything. It was viewed as arising from having thought critically about something, and as a tool to think more deeply and discerningly about something. For example: a) travel broadens the mind to accept new ideas, and conversely b) new ideas could be tackled using CT in history. Its purpose is to equip students to adopt a sceptical approach to knowledge, for example, in dealing with historical sources. The purposes of CT were described as being able to critique and reflect, but in only one lecturer explained directly that the epistemology of disciplinary knowledge itself should be explored. Largely then, the prevailing knowledge presents the opportunities to explore its own epistemological foundation only. To some extent, the knowledge to which CT was directed, seemed to provide the purpose of CT as exemplified in the lecturer data (see 4.3.4 and 4.4.5).

The perceived purpose of CT was driving some aspects of reasoning about what CT could be, as well as the pedagogy of CT itself. The design of SLs and the observation of the lessons did not reveal the implicit or explicit nature of the pedagogy for CT. Instead, it was evident in the

interview data that planning for CT was implicit in two instances and explicit in the other instances.

Other factors that were perceived to be of relevance and value in the module were: the authenticity of the tasks and materials that affected the engagement levels; the amount of effort required to think critically was weighed against the benefits thereof; and the students' motivation was a driver of engagement in CT based on the perceived degree of difficulty experienced in the module. The cognitive demands and the layers and complexity of CT itself were demanding and caused students to become anxious, for example, in the performing arts. It appeared that at times, the purpose of the module was not the same for lecturer and student.

5.5 Chapter synthesis

The chapter establishes how the national mandate for CT is evident in the design of institutional documents. The presence of CT is declared in institutional planning documents (study letters). However, the themes of this chapter indicate a variety of ways in which the presence of the entries in institutional study letters may be read. The lecturers' constructions of CT can be understood from the way that the lecturers name critical thinking. In most instances, the CT naming and descriptions occur in the context of the discipline. At times lecturers displayed some doubt about their grasp of the concepts of CT. It is noted that the naming of CT is integrated with the kind of knowledge against which the CT was being discussed or activated (largely disciplinary knowledge). However, all of the lecturers made comments that referred to the importance of common knowledge and knowledge gained from lived experience in the teaching and learning of CT.

A surprising revelation was the complementary influence of a second discipline, in which the lecturer was qualified, which was used to discuss teaching and learning of CT. The disciplinary knowledge and common knowledge were seen and heard to be drivers of the CT explanations and pedagogy. However, again the second discipline featured strongly in the discussion of both. The naming of the sections (see 4.3.1- 4.3.4) points to the pedagogical approach used by the lecturer in enacting CT and in discussing how CT is constructed. ~~In each case, t~~The lecturers' views of knowledge in relation to the discipline(s) in which they lectured, revealed a unique approach to teaching and learning of CT. It is noted that the construction was driven by the lecturers' view of what they thought CT was, how it was taught in the discipline (using aspects

of other disciplines) and what they believed their role to be in enacting CT. The approaches ranged from the lecturer thinking alone to a lecturer thinking for the students.

The final theme which is formed in this chapter is that of the perceived purpose of the module as a driver of CT construction and enactment. The themes share a distinct impression that the topic of construction and enactments of CT are not straightforward. The next chapter establishes why lecturers of P-STs construct and enact critical thinking in the way that they do. The added perspective of the next chapter continues to build an expanded understanding of the findings. It addresses the third critical question of the study concerning what explains the construction and enactments of lecturers with respect to CT.

CHAPTER SIX: FACTORS INFLUENCING LECTURERS' CONSTRUCTIONS AND ENACTMENTS OF CRITICAL THINKING

6.0 Introduction

This Chapter Six, is a twin of Chapter Five. Chapter Six analyses the same four participants' data from Chapter Five. In this chapter, a set of factors which provide the rationale for lecturers' construction and enactment of CT in P-STE is revealed. The purpose of this next chapter provides more complex understandings of the key issues raised in Chapter Five. The focus is largely on the influences on the individual lecturer as he or she enacts CT. The discussion spans factors of national, institutional and individual influence to which lecturers attribute their CT in terms of construction and enactment.

6.1 Overview of the chapter

This chapter is comprised of four sections. The first section is the chapter overview (6.1). The second section addresses factors that originate with the participants and students with respect to the constructions and enactments of CT. The participants are the same four encountered in the previous chapter (6.2). Reflections across the participant data sets are a full account of what factors influence participant constructions of CT; they are past, present – home and schooling, and their own higher education experiences (6.3). The chapter synthesis aggregates the themes from Chapters Five and Six (6.4).

The arrangement serves to illustrate the trends in the factors of influence assigned to the participants' constructions and enactments of CT, and this is the final data analysis chapter that explains the forces (constraining and enabling) acting on the participants' constructions and enactments of critical thinking.

6.2 The participant data: What influences participants' constructions and enacted curricula with respect to critical thinking?

6.2.1 Factors influencing critical thinking: Personal and programmatic design

The sections below present the data and interpretations of why lecturers construct and enact CT in the way that they do.

6.2.1.1 Ali: Compliance and individual success attainment (singular in critical thinking, singular in effecting critical thinking)

Ali focused on the factors of what he had experienced in his previous teaching and learning, and in his own biographical journey and what he needed to do in terms of the module he was lecturing. He wanted to teach fundamental mathematics and to support his students in their endeavours. When asked why he constructed and enacted CT in the way that he did, his explanation described the factors which suggested he was entirely self-sufficient in effecting CT. He had a generosity of will and intention, and his approach was singularly influenced he said, by his childhood upbringing in which he had to "figure a lot of things out on his own" because his parents did not live in the household where he lived. Ali's explanations of factors influencing CT paralleled what he had experienced in his early years and later in his higher education (HE). His self-containment was attributed to successful critical thinking. He expected the same of his students but in the interview, he explained his enactments by means of layman's examples, what his internalised critical thinking constituted. Ali spoke of CT in layman's terms and in the context of everyday life, rather than in terms of academics and teaching and learning. He seemed encased within his own thinking. This may have been a result of not having a professional teaching qualification, and little HE teaching and learning experience. He had good intentions for the students but it would appear the only way he knew how to help them was to replicate his own experiences.

Ali did not talk directly about his ideas concerning how factors influenced CT and enactments thereof in his lecture, but he was able to use analogies of factors in life and education in general. Firstly, he said he had encountered learners and students who showed promise in a particular area (e.g. football), but they could not perform well in another area. By this I understood him to imply that genetic pre-disposition was a factor in critical thinking. He said that for anyone to think critically, they would have to have been born into it or placed in a situation where it was being practised in order to gain exposure. He used the analogy of an athlete who is steeped in an environment in which factors such as for example, diet and performance expectations are commonly practised and are thus unchallenged. He implied that there was value in received wisdom (e.g. of the best approach to preparing for athletics) in the absence of any alternative knowledge. It implied that the CT was carried out in the act of deciding what wisdom to follow regarding sporting activities; that, in itself, constituted CT. For those aspiring to improve in a sport, they could be led to question how to improve their talent. Thus, CT could be taught. He said that a person needed to be encouraged to develop their talent. It might be that the talent

was discouraged by parents who favoured a pursuit deemed to be more worthy of attention. One needed the ability, capacity and permission to progress and that would have to be followed by repeated testing and practice to improve the talent or ability. I gathered here that his analogy of sport might be applied to one becoming adept at mathematical thinking, which he believed was, in itself, critical. He said that CT could be influenced by perseverance and patience in the process of teaching and learning. Critical thinking would be needed to solve mathematical problems and one's CT could be improved with practice, and it could even become a habit. Students needed to be encouraged to think critically. Again, using the analogy of the athlete, he said that students needed the courage and willingness to try new things. He named determination on the part of the thinker as a factor which needed to be present. He said that the ability to think critically was thwarted by a lack of opportunity and the lack of invitation to think in that way and, in some cases, learners and students required confidence. Ali said of CT that he was not able to ask some questions of a critical nature because of deference to his elders, so he remained silent. However, he was sure that if he asked questions, he would have received responses. His explanations of factors influencing his view of CT followed closely the factors that had influenced his own CT experience in his discipline and life – singular in critical thought (his own) and singular in effecting CT (almost entirely without student input).

Ali seemed focused on how, once mathematics CT was activated, it could be furthered. He also said that if there was a mandated requirement to think critically, then the compliance would bring success. He added that thinking critically was a way to conduct oneself within a system that demanded CT. If CT was not factored in and a person did not remain within the boundaries of that requirement, failure to fit in could jeopardise success. He stated that CT therefore influenced results, and that success in mathematics was an indication of effective critical thinking.

6.2.1.2 Gugu: Rich experiences recreated in tension with current challenges (singular in critical thinking, collective in effecting critical thinking)

Gugu unequivocally attributed her CT experiences to her parents, both of whom were academics. Her parents nurtured their children by posing questions, encouraging them to ask questions, granting permission to speak, validating their responses and input, and nurturing their natural curiosity. Her parents were not intimidated by the cultural norm that, at the time, preferred children 'to-be-seen-and-not-heard'. Gugu claimed that she had carried this openness into her own household. Her travels later in life, and experiences with music from different

cultures were named as strong influences on her CT because they led to exposure, challenge and a requirement to be adaptive.

She attributed disciplinary learning and specific academic engagement to the norms of Western music traditions. This was not a factor for her CT but for the students from diverse backgrounds because the focus on a single music tradition in the theory part of the module was exclusionary. She felt it was her responsibility to create opportunities for her students to attend differing musical performances so that these experiences could broaden their access to opportunities for critical thinking. She had high-quality experiences of CT in her own HE background that she attempted to recreate. The high-quality education opportunities for her students in a new era were accompanied by new challenges.

On the occasions when her students were required to attend performances, they were asked to look at *a priori* focus questions (a factor in CT success) and they all attended the arranged musical experiences despite these occurring after hours (a factor suggesting participant expectation was made clear but at the same time perhaps challenging for students who might experience a lack of funds and a threat to their safety when using public transport after dark. The student interest in the performance attendance was such that the students, she explained, had made arrangements to stay with friends instead of attempting journeys at night). Gugu said that the students would not only have an opportunity to attend the music performances, they would also have an experience of the varied venues they visited.

Gugu said that she felt the students who knew musical performance and performance styles other than Western music traditions were at an advantage because they then had knowledge of two traditions. Their knowledge and experience of music outside of the WUT were not validated. She felt that her musical knowledge preparation was inadequate for accommodating diversity in her lectures. She also stated that the students' opportunities to think critically were adversely affected because the curriculum focused on one, rather than multiple music traditions. Gugu stated that there was dissonance between what students were expected to critically evaluate and what they experienced. Gugu's failure to acknowledge alternative music experiences affected how she might have been inclined to assess students' work, as such assessment usually required critical thinking.

A unique characteristic of this music module was the requirement for students to think critically about written words and performance and to apply CT to the act of playing music 1) because

they needed to learn the nomenclature required to play music and 2) because of the cognitive and affective CT they had to enact to perform musical pieces accurately and in an aesthetically pleasing way. The students also had to critique the music that they heard others play. The CT was thus influenced by the numerous requirements and outcomes of learning to play music. Gugu said she felt constrained by time to critically explore the depth and breadth of music and even to teach the students to achieve at a level of performing small sections of music on an instrument.

The language of teaching and learning was English, which she felt thwarted students' access to written work and, thus, their understanding of the work that they were required to critique academically. This may have had a domino effect on the criticality required to read music using an added language of musical notation to read and perform music. Gugu was fully aware of the demands on students to be critical and to perform critically. By using only, the nomenclature of Western music, she felt that it excluded students who were otherwise adept at performing in other styles from expressing themselves critically because of the skewed academic focus and criteria.

Gugu knew that the music selection for listening and performing was monocultural and exclusionary; she felt that the curriculum in HE and at the school level needed to be critically evaluated to provide equal opportunity for students from diverse backgrounds to succeed. Gugu stated that CT was influenced by the lecturer's presence and engagement with reading and literature and that the lecturer influenced CT by taking the lead. Gugu said that the institution prided itself on doing what was required in terms of mandates and producing students whose work shows excellence, but CT made demands on lecturer time in ways that the institution did not take into account when establishing the length of lectures. Critical thinking also required time to be invested in developing CT among academics. Pressure to complete the content in ever-decreasing timeframes resulted in the CT mandate being side-lined. Critical thinking was constrained by institutional values and ethics that can be restrictive or misaligned with the students' and lecturers' values, for example, religious views that might constrain particular content. The participant said that growth emerged from CT, therefore, the time to think critically is determined by business-finance equations in an independent institution. Investment in critical thinking needed to be negotiated with the lecturers.

Gugu spoke about how language influenced the students' competence in expressing themselves in the verbal and written critique of music. As mentioned before, the learning of musical

nomenclature and the use of English as a second language were factors in students' use of critical thinking. The participant said that she had to employ a variety of techniques to encourage her students to engage in CT – these included asking direct questions and making provocative statements, and activities for engagement through discussion, practice and participation. Gugu's preparedness and humble attitude towards her students influenced her critical thinking, validation of students' input, requirements for students to elaborate on their responses and the welcoming of collegial input in her lectures. Gugu enriched CT opportunities with openness in the same way that she had experienced it in her HE. She also welcomed unexpected circumstances, for example, in the orchestra layout, as opportunities to initiate conversation; unexpected outcomes of CT were also welcome. Gugu stated that CT was best achieved in tutorial groups because it placed pressure on students to prepare, and it permitted interaction between the student group members.

Gugu said that students needed to be made aware of what is expected of them and be prepared for the interaction that is required. The students needed to have meaningful and rich experiences and materials to serve as catalysts for discussion. Critical thinking was enhanced by frequent opportunities and clear requirements to think critically and the confidence to express themselves. The value of 'being outside one's comfort zone' was a powerful propellant for critical thinking. CT was enhanced when attention was paid to all the layers of learning (theory, language, cognition, and physical and aesthetic performance) and the accompanying criticality. The participant said that her clarity about CT influenced CT enactments and constructions, but she surprised herself when participation in the research showed that CT must be deliberately planned, but that it can also occur incidentally; more so than she anticipated. Gugu was *singular in (planning) critical thinking, collective in effecting critical thinking.*

6.2.2 Factors of participant and students' origin influencing critical thinking: Home, socio-cultural and academic targets in pre-service teacher education curriculum environment

6.2.2.1 Linda: Sociology and perceived student needs in transition

At the start of the interview transcript, Linda indicated that CT for personal purposes and academic purposes were separate issues. Critical thinking was useful in life-in-general. She had experienced the advantages of CT over time as a result of being introduced to it by two adults at home when she was a young adolescent. She said that one of the benefits of CT was that risk began to decrease because she spent time thinking through matters before making decisions. She was taught that when she reached a conclusion about a matter, she was prepared to accept that the decision would need to be re-evaluated in light of any new factors arising.

The rest of her family was not particularly pre-disposed to CT; rather, they viewed it as wasting time, as opposed to being decisive. She stated that CT was not defined, but her personal experience of it seemed to point to it as being problem-solving, decision-making life skills. The participant said that CT creates wisdom, so she saw herself as having developed the wisdom associated with age. Linda explained that she attended a racially-segregated, single-sex, authoritarian high school in which the influences on CT were absent before 1994. When she transitioned into HE, she implied that the multicultural environment that had begun to emerge and the greater freedom of thinking was quite a culture shock. Thinking and CT increased.

It was stated that CT was taught deliberately in her undergraduate HE years, which incidentally coincided with the years during which the South African National Party was relinquishing political power. Her encounters with lecturers and professors were in complete contrast to schooling where there had been an emphasis on facts. In HE she was taught to challenge everything, to write discursive essays that challenged authors' authority – her opinion was sought. The university focused on equipping students to think critically – some lecturers advised explicit methodologies, for example, SWOT analysis, analysis of positives and negatives and heuristic-type approaches to encourage responses in students' writing. She was taught to respond to catalyst command terms for CT such as;

> *... critically evaluate, think critically, etc.* (Linda)

Linda offered to try to find her study files which showed how she had been instructed in CT when she studied her undergraduate degree. She said she thought that the steps she was taught in preparation for critical writing were taught as transferable across disciplines. When the discussion of CT turned to my own experience of CT in HE, I, as the researcher, explained that CT was expected in some modules, but it was not taught explicitly. Linda suggested that it may have been implicit and unnamed but was nonetheless, a form of CT.

Linda said CT can be constrained when students choose to gather and move in cliques based largely on race or ethnic group; she encountered this in her own HE and found a similar setting in current lectures. She said that CT had the potential to loosen ideas and spent some time explaining how the CT that occurred in lectures was a catalyst for creating better, more altruistic people. Altruism would be achieved by rationalising, adapting, altering, shedding and replacing old ways of thinking to form new knowledge.

Linda described factors of a wider nature that she believed influenced critical thinking. She said that CT was not particularly welcome in South Africa because that would mean questioning everything. She said:

> *Not many people, not enough people of that 7.7 billion people in the world can think critically.*
>
> *… in our society as South Africans, in our civil society, I don't think that we do enough critical thinking.*
>
> *Mainstream does not want you to think critically.*
>
> *Critical thinking is not forthcoming on television or internet.*
>
> *Thus, the elders, participants may not have some of the skills needed.* (Linda)

Linda explained her ideas about CT from the perspective of developmental psychology in education. She tended towards explaining the factors influencing CT from the perspective of a deficit model, for good reason, it seemed. Ironically, she attributed students' disposition to prenatal and early childhood conditions and experiences. This meant that a deficit of the factors named in the lower levels of Maslow's hierarchy of needs (psychological and safety needs) would lead to deficits in CT ability. She proceeded to explain how the right support to think critically could be constructed in lectures. She had faith that her own thinking about how she would enable all her students to think critically.

Of the highest significance were the factors related to the individual, family and community identity, which she said were rooted in the segregation created by the apartheid system. Linda said this because she saw the past as painful and challenging in so many ways. She saw segregation and closed thinking in her lectures and even experienced students who judged her based on her appearance, ethnic group and language ability. Students had pre-existing notions of persons of other races in the form of prejudice and subjectivity. She stated how students' socio-economic circumstances could limit opportunities and experience, and how students who had cultural and academic capital (in a WUT) could more easily achieve critical thinking. She was steeped in the ways of the sociologist, and she was convinced that students brought to the lecture room their guardedness, emotive issues and personal and social identity and they were initially unwilling to shed these until a deliberate effort was made to open their minds. She said that deliberate and planned pedagogy helped students to feel less threatened and more willing to consider new ideas. She claimed to have used the building blocks of Piagetian developmental

psychology to introduce concepts and facts, and create cognitive and material visual imagery in small parts and then begin to amalgamate them. The students were then led to notice facts, concepts and attitudes that they had not encountered before. The relevance and interest level of the material used as catalysts for thinking needed to be current and relatable. Students then evaluated and re-evaluated them in a cyclical (not linear) manner to form new concepts and gain a greater vision. Linda indicated that, at times, the content for the lecture was in many ways challenging for individuals, resulting in them 'switching off' and maintaining their bias because it cost them little energy to do so. Linda also saw her non-verbal cues as influential in the teaching of CT – prompting, encouraging etc. She felt this was her influence.

She would encounter factors such as family or racial identity which some students felt uncomfortable changing because they felt they were betraying the people at home (elders) who had given them that identity. Linda said that some long-held learning and transmission of ideas about identity can perpetuate a 'narrow-mindedness'. She said that there have always been factors at home that have influenced CT, including the existence of elders who taught CT (even though it was not called critical thinking specifically).

Linda stated:

> *You cannot think of critical thinking as a definite label. We have to because as academics you're taught to do that and you have to teach other people to think critically, so you have to label the concept. So unfortunately, we think of it in terms of labels and what it is in academics, but I think human beings in general start to think critically …* (Linda)

Linda's experience of transition from an authoritarian high school to a multicultural HE environment was a culture shock. Being a highly sensitised and observant lecturer, she tried to create a bridge for students to make the high school to higher education transition more smooth. A lack of confidence could affect CT, therefore she sought to strengthen her students' confidence. She held that exposure to thinking differently led to the capacity to think differently and students had to engage frequently. She held the opinion that CT extended beyond the narrow understanding imagined in HE.

6.2.2.2 Sheldon: Uncertainty, structure and action

Sheldon expressed concern about his understanding of the constructions of CT because he felt it was not clear what it was or how he was required to perform it in line with institutional requirements.

> *Exactly so it's something that we all say it's like a term we all use like a part of the lingo like you're in when you go; "21st century learner or critical thinker", but do you actually know what that means? I don't think any of us actually know. We all have our own ... like idea I suppose' because that's what I was saying to [partner's name], like now you're going to put me on the spot today because we all talk about the critical thinking, but like do I actually really know what this is.* (Sheldon)

Sheldon made the following statement more than once:

> *Critical thinking has no clear-cut definition, there should be more guidance in the CAPS document so that the understanding is standardised.* (Sheldon)

He claimed the influences on CT as those of which he became cognisant in his last year of schooling and after school when he went to a higher education institution to qualify as a professional educator. He became aware of the need to think critically when he became a historian. He said it was a gradual process. He also said that clarity of thinking influenced CT and he liked to talk about logical, chronological, sequential, concurrent and organised thought as being important for CT and also the ability to aggregate, disaggregate, reflect upon and incorporate many aspects of thinking at once. He said that CT could be enhanced by being aware of one's surroundings and questioning one's purpose and existence. Critical thinking should emerge from a natural inquisitiveness. Sheldon claimed that he learned CT at university, and he was constructing his lectures in a way that would encourage CT in his students although often the CT was not planned but rather incidental. He prized general knowledge and disciplinary knowledge as foundations for CT and said that he was concerned that students were not abreast with general knowledge and current affairs. He also said that he used textbooks that reflected the popular narrative of the post-1994 era of redress for an unequal past; this was a requirement for current HE practice. The prior reading of large tracts of text posed problems for some students who claimed that the texts were too extensive. Reading and literacy in the language of teaching and learning, and poor experiences of teaching and learning in schools, may have contributed to students' claims. Consequently, Sheldon designed lectures to break the text into smaller pieces to make them more manageable, even at NQF Level 7. He said that students' literacy experiences at high school adversely affected their critical thinking. Additionally, many of the students in the module had not encountered history as a school subject since Grade 9 and others had taken it at Grade 12 level.

Sheldon said that he needed to prepare for lectures and CT events because he was responsible for creating opportunities for students to be challenged. His stimulation material varied, but he used audio-visual material quite widely, as he had done previously in school teaching. He said

that a lecturer was needed to guide students through CT experiences. He felt that students had to prepare for lectures too so that they could engage with the readings, materials and discussions. He explained that he prepared sections of work to be covered and selected themes to follow but the students' interest indicated the direction in which they would go with critical thinking.

Sheldon said that CT was informed by norms. The norms were determined by individual personal experiences over time in particular and varied environments, for example, living in South Africa in different eras – pre- and post-1994. He attributed the high frequency of involvement in CT of a particular student in the lecture to the fact that she had been schooled outside South Africa. This was a mature student who seemed more confident than the others; Sheldon had mixed reactions to the CT frequency, welcoming it on one hand and indirectly alluding to it as being inappropriate according to South African norms of politeness and consideration. He gave the impression that the student's contributions interrupted the flow of the lecture and took up too much time. Also, the experiences of living outside South Africa had the effect of removing the student's inhibitions when speaking about race, culture and apartheid in a way that others might have been uncomfortable doing. Sheldon spoke of age and maturity as factors that influence critical thinking because he felt that younger students were less willing to engage with him or with one another in lectures. He stated that courage, preparation as a historian and professional educator experience were required to deal with controversial and uncomfortable history and that the students' preparation for such engagement had to be structured.

Sheldon said that students were 'outspoken' in his lectures which he found he enjoyed. The use of the term 'outspoken' was significant because that told me that the participant considered it a bit daring to do such a thing. Perhaps it could be interpreted as something that was a little out of place. Being described as 'outspoken' in my own era of studying was not considered an attractive feature, especially among women.

Sheldon said that students' willingness and courage to discuss and explore were essential and inspired him to engage meaningfully, although he had encountered student groups that were not prepared to engage and invest in critical thinking. They were interested only in learning the facts and passing the assessments. Sheldon felt that some students had the innate ability to think critically but that all people could be taught to do so; his enactments of CT indicated his determination to ensure that his students did that. Sheldon created a safe space with specific

agreements in place in which the students could interact. He wondered how the creation of a safe space, and encouraging students to interact would work out and said that it took courage to attempt such things. He spoke about students to whom he assigned stereotypical behaviours such as being more reserved in participation on account of mixing with a particular ethnic group. He said that students who identified with the group needed to be encouraged and needed to grow in confidence to engage critically because the experience was unfamiliar to them. For this reason, he felt that pointing out to students that they may experience discomfort at expressing ideas and thinking about things they had not thought of before, was essential. He expressed how students were influenced by their home situations and their community influences. Sheldon stated that the way in which he prepared students for viewing videos that dealt with apartheid laws and the effects on the population could stir emotions and that students needed to be allowed to process this part of history in a structured way. Having said that students in his group were willing to engage in awkward conversations about sensitive issues, several students were wary about engaging in some discussions out of concern for inadvertently offending. Media reports of a teacher at a local high school being accused of making racist comments related to subject content unnerved the students. Despite their reticence, Sheldon felt that students mature and objective approaches to discussion brought greater confidence and engagement and the students were sometimes permitted to take the lead. I observed that in the lecture enactments, he led the discussion.

Although Sheldon spoke constantly about factors that had their origins in the students, he spoke mainly of how he influenced their critical thinking. It was also interesting to watch the lecture footage and see that Sheldon was providing perspectives about a national holiday celebration (historical) from the perspective of his ethnic group while few of the students in the room were from the same group. This was an example of how the separate living arrangements of the country's past impacted the present because he did not know what lived experience and other knowledge students from multiple ethnic groups held.

Sheldon created quality time to engage in CT but was adamant that there was too little time allocated to the lecture to cover the content, and this threatened the CT time.

Sheldon's motivations for constructing and enacting CT in the way that he did was driven by uncertainty, therefore he needed structure to effect CT enactments.

6.3 Reflections across the participant data

6.3.1 What influences inform the participants' constructions of critical thinking?

6.3.1.1 Past, present – home, schooling influences on critical thinking

The factors are arranged as themes of influence in the participant's constructions of CT. Of factors biographical and programmatic in nature, one might say that they are situated in South Africa on a time continuum ranging from the late 1970s to the present. The four participants in this study were of varying ages, and there was a link between socio-cultural child-rearing practices, historical schooling trends and HE practices over time which influenced these individuals. The personal influences at the centre of human lives and education are inseparable, because biographical experiences have been, and continue to be, a central consideration for all the participants in this study – the participants having been raised in South Africa, educated in South African schools and higher education systems and being participants of P-STs, they have spent their lives 'in the South African education system' with exception of one participant who worked abroad for a year or two.

Linda was the eldest participant, Gugu the second eldest, Sheldon the third eldest, and Ali the youngest. Three of the participants explained child-rearing practices in their homes. Linda was raised by two parents, one of whom took great interest in raising her to be independent and a good problem-solver. She was encouraged to make the 'right' decisions in life. Gugu was raised by academically-qualified parents who were highly influential in her introduction to critical thinking. Not only was CT introduced, but it was also encouraged and nurtured. She could cite instances when CT was encouraged and exercised not only by herself but also by her siblings. CT was about religious and secular matters. Gugu's parents had 'bucked the system' by raising their children to be critical thinkers at a time, and in a socio-cultural space where it was not commonplace for parents to entertain such liberties for children. Gugu claimed that her upbringing stood her in good stead to activate CT in her students. Ali was raised by extended family members. Ali shared that he had been left to his own devices about thinking and questioning in a home where the parents were absent. Sheldon made no claims about influences from home. Two of the participants were from the same ethnic group; the remaining two were from two different ethnic groups. Thus, three different ethnic groups were represented. Among the four lecturers there were three different home languages spoken at home. This is significant in that the matter of language is a considerable point of concern across South African education. This is significant because two of the lecturers spoke about the matter of language as a deterrent to access to knowledge. I felt that it might also influence the interview

and possibly CT also. Ethnicity, language, knowledge and communication could be great influences in discussing and enacting CT.

Linda, who was slightly older than Gugu, said that she had been taught CT by two significant adults at home at around the time that she became a little rebellious as a young adult. She felt problem-solving input from a parent had prepared her to become wiser and she was then able to recognise how CT could be useful to others, particularly her students, in various ways. Linda was known for her caring, supportive approach to lecturing her subject and assisting students in their learning.

On the matter of the influence of school as an influence on CT, all of the participants spoke little about those influences. This is unsurprising because all of the participants attended school prior to 1994, the period in education when CT was not encouraged. Linda said that she attended a single-sex, monocultural, authoritarian high school where CT was not encouraged; she added that, in general, CT was not an encouraged or easily tolerated feature of South African life. By this the participant was referring to political and economic issues that arise when people engage in critical thinking. Gugu said that critical thinking at the faith-based school she attended was limited especially when the thinking covered unconventional topics. Sheldon said that an awareness of critical thinking began to dawn on him in the later years of school when he encountered history as an elected matric subject. When asked about his schooling experiences, Ali, who was the youngest participant, said that he had encountered few teachers who encouraged critical thinking. Ali's main concern on recognising that CT was a mandated outcome of education, stated it was then necessary for CT to be pursued for people to be successful, even though he could did not explain in the interview, how this would occur in the lecture setting. It was apparent that the lecturers recognised compliance (at an institutional level) to be a factor affecting CT by writing the words critique, critical and critically in the module study letters. Gugu was able to give a full account of factors influencing her personal CT, and teaching and learning pedagogy, while Sheldon and Linda were more tentative in their assembly of ideas about CT.

6.3.1.2 Own higher education experience influences on critical thinking

The influences of personal HE experiences as undergraduate and postgraduate students featured prominently across the cases of Linda, Gugu and Sheldon who claimed that their CT was strongly influenced by their own HE programmatic and disciplinary experiences. Ali did not state that point explicitly. Higher education experience appeared to be a significant factor

that shaped teaching and learning at two levels. Higher education had a profound effect on the participants' critical thinking.

Participants' first encounters with CT in their own higher education experience featured strongly in the interview data. Some said that the demand for CT occurred within a discipline or across their programme of study. Their experiences were that lecturers who taught them were influential in effecting CT. At times, the nature of the discipline demanded criticality skills in preparation for becoming, for example, a historian or a scholar of the performing arts student. At other times, they had to be seen to be exercising CT on demand from the programme of study and, in one case, the lecturer made no comment about such requirements in their HE experience.

Sheldon particularly, recognised CT influences in his preparation for being a historian, when his lecturers challenged him to think critically and required him to find clarity in thinking in an academic sense – he said it was achieved by thinking vertically and laterally and organising thoughts related to disciplinary knowledge. Sheldon identified himself as the key driver of factors influencing CT, but he was also aware of other factors which he navigated to achieve the best results for critical thinking. He was a professionally qualified teacher who saw fit to use his disciplinary learning and teaching experience from two disciplines, to structure opportunities for his students to engage in critical thinking. Sheldon thought he had to make the knowledge relevant to students (to present-day occurrences) to engage them in the thinking that was required in history. He also stated that the work of a historian deals with controversial and sensitive matters, particularly the period of South African history that he covered in the module under focus in this study. Sheldon felt his presence as the lecturer guided the student experience because he had planned the lecture for students' interaction and participation in a safe, respectful environment where they could gain confidence. When speaking of the interaction he had with a particular student in the lecture during the observed lecture, Sheldon said that this person had too much to say during lectures, possibly implying that the student interrupted the flow of the lecture and took up too much time of the planned lecture. The student he was referring to was a South African who was raised abroad. The lecturer may have been referring to a student not knowing that participating 'too much' in the thinking of the lecture was impolite. Perhaps the lecturer was showing frustration at not being able to cover the planned lecture because the pace was slowed by one person having 'too much' to say in the time given. The lead and structure of the lecture were centred around Sheldon. He implied that

he had much to cover in the module. He set the pace of the lecture and kept control to be able to achieve that aim. Perhaps he had that experience as a student in HE but it served him well, and he appeared satisfied that the content and CT he had planned to cover were achieved.

Linda's experience of CT was different. She explained that her transition to HE, from high school, was a culture shock. The transition coincided with the end of apartheid (1994) when all education institutions were officially racially integrated for the first time, therefore, Linda was transitioning from a monocultural school to a multicultural HE setting. She stated that CT was undergoing a resurgence of awareness in an organised and deliberate way in higher education. Perhaps deliberate CT was introduced to mark the passing of an oppressive régime that had discouraged critical thinking. She was taught discrete CT skills in some academic modules and she believed the skills could be applied currently with the same positive effects. Linda described the experience of this 'thinking revolution' as being a shock. It heralded new-found freedom in thinking and at the same time, she was dealing with her thinking about the new social milieu in which she was studying. In terms of political and historical control, censorship, and experiences of the authoritarian nation-state, Linda explained that those had a restrictive effect on CT. She said that it had a stifling effect on CT, therefore, at the time of entry to higher education, it was an unaccustomed occurrence for students to express their opinions openly. The experience of the transition from high school to HE seemed to stay with Linda, and she continued to see the effects of a repressive and separate past in the lives of her students as factors influential considerations for how she structured critical thinking for her students.

Linda stated that attitudes, based on generations of suspicion and mistrust, attached to a segregated past, made her and students wary of their multicultural HE settings. She also commented on how she felt in her role as a lecturer teaching and learning CT in a multicultural setting – it was a new experience and an overwhelming one. The students' reluctance to engage in CT she attributed to the identity to which students clung for security and belonging, and which they had inherited from their communities. They felt that they were betraying their families' values by making way for other types of thinking. Linda stated that students from all socio-cultural backgrounds were a little overwhelmed by the need to engage in CT in a post-secondary environment. Her own bewildering transitional experience (culture shock), experienced in the move from an authoritarian high school to higher education, led her to the conclusion that her own students needed to be scaffolded in teaching and learning, and especially in CT. The overwhelming experience in this instance occurred with the requirement

to think at more demanding levels than had been the case in school subjects, where rote learning and a focus on assessments were prevalent. This participant lecturer transposed her higher education experiences onto those of her students. Perhaps other participants experienced similar tension in this area but they did not speak of it in detail.

Linda displayed a focus which indicated the intention that students were to be at the centre of what she had designed to be a positive learning experience in the lecture. Linda, a qualified education professional with school teaching experience, explained that all students were capable of overcoming barriers to learning. She found herself responding to students' needs by approaching teaching and learning from a deficit perspective. She named factors which she said were a result of a history of deprivation of secondary schooling and experience standards for her students. The deficits were as a result of a divided and unequal past in terms of access to schooling and the reality that some students were innately predisposed to CT and others not. Linda had the students' interests at heart and ensured that the build-up to success was achieved by breaking knowledge and CT into manageable chunks. Informed by the fields of sociology and developmental psychology, she worked at using CT both as a process, and an outcome, to achieve the changes she believed needed to be addressed in student learning and thinking. Linda sometimes scaffolded CT so that the students had the assistance that they required, without which they would not have achieved the higher thought that she thought they could and would attain. At times, it was not entirely clear whether Linda was referring to the development of CT, or to the development of knowledge; she seemed to imply that both were the same.

Gugu had a rich experience of HE and opportunities for CT; she appeared to view those as the way that CT ought to be encouraged in HE. She had attended HE during the pre-1994 era, in a university where segregation through apartheid legislation was still in force. She said that the CT was aimed at the disciplinary knowledge in tutorials and other forums for her discipline. Her explanation concerning the disciplines she studied was that they were demanding, well-resourced and well-structured. She noted that in her HE experience, study groups were small, reading and critique were central and expected in her modules, and she, and the institution invested in opportunities for thinking critically about disciplinary knowledge. She felt that she had the added advantage of being able to address matters of critique at home with parents who had the academic capital to engage. She spoke of her HE with longing for the same opportunities and quality of education to be available to her students in current times. Perhaps

as a result of the foregoing points, Gugu's early experience and incremental exposure to high-quality education and multiple opportunities to engage with disciplinary contents and people in a critical manner, translated into a teaching and learning practitioner who sought to recreate high-quality experiences for her students. She spoke confidently about how and why she constructed and enacted CT in particular ways. She was able to articulate how and why students should engage in CT at an academic level and in general. She demonstrated her awareness of CT in the way she spoke about how she has, could and would activate CT in her lectures and why she and her students were required to think critically. Moreover, she demonstrated an acute awareness of what influenced CT in her work and that of her students. Her actions and explanations were based on her experiences as a child with an academic foundation, and as a student in a racially privileged educational institution. I would describe the participant as one who did not settle for less than the fine experiences she had encountered. The enactments and concepts of CT were well-articulated in the language of pedagogy, despite the lack of a traditional formal qualification in education.

Some participants specifically indicated the increasing demand placed on them to exercise critical thinking, in progressive HE degrees. Another notable point to make is that the CT was instituted almost exclusively against knowledge in the discipline. The building of lecturers' courage, confidence and conviction about disciplinary content was the strongest component on which CT was developed; the finding is unsurprising. The transferability of that critical thinking was spoken of mostly in terms of the discipline. Two lecturers spoke of CT outside of the discipline; they indicated that CT could be transferable to life-in-general, but Linda spoke of CT as most useful to life outside of the academy, thus reflecting her own learning as a child and adolescent. Most of the discussion in the semi-structured interview showed that CT was discussed largely in terms of the pedagogy of CT.

6.4 Chapter synthesis

This synthesis covers Chapters Five and Six

In Chapter Five it is established that CT appears in institutional documents. The presence of CT as declared in study letters suggests that the national mandate for a CCFO-CT has reached the institutional level. Lecturers are able to name and describe CT in ways that are commensurate with the discipline in which they teach. Activation of CT against disciplinary knowledge, and also against common knowledge, and lived experience is deemed significant.

Much of the discussion recognises the centrality of the discipline but the analysis reveals the importance of the role of additional disciplines (for example, the second discipline) in effecting the pedagogy of CT. The lecturers' view of where knowledge resides and who is the guardian and agent of that knowledge drives CT pedagogy. It is evident in the lesson observations the effect that the lecturer's knowledge agency has on the pedagogical approaches for CT. Additionally, the lecturer's view on the purpose of the module is part of the driver for the way in which CT is enacted.

The findings which enrich the understanding of how lecturers view knowledge, how they engage with knowledge in lectures, how they facilitate critique of the knowledge in lectures and what they believe to be enactments of CT are indicated in Chapter Five. In Chapter Six, the reasons that lecturers provide for what influences their views of CT are set out.

In Chapter Five, the way in which participants approached CT took on unique enactments that were driven by the discipline, the desire to see that students had the richest experience of the knowledge against which they could actively engage in CT. The drivers of enactments of CT also adopted structured processes to guide students very closely in addressing knowledge that was unfamiliar and in deficit. The other approach was to plan for CT enactments by providing materials and stimuli for CT with a view to developing the thinking of students. All of the participants seemed determined to provide their students with the best possible chance of learning successfully and having the opportunity to experience CT.

In Chapter Six, the participants indicated that the influences which shaped their CT construction and enactments included encouragement from parents to think critically (for themselves mainly about everyday matters) to which the participants assign their early experiences of CT. Not all the participants attributed CT to experiences at home. The purposes of CT at home were identified as developing awareness, forming grounded preferences and understanding, providing platforms for decision-making, being considerate and becoming wiser and more mature. However, equally so, the absence of discussion about the influence of home on CT by other participants is not unexpected, but rather aids understanding about how CT occurs in the absence of influences from home.

With and without influence from home, the participants recognised the need for CT in their lecturing of P-STs and they were able to articulate their views of CT. What then was the catalyst or opportunity to begin thinking critically in a conscious manner? Critical thinking encountered

in the higher education environment in which lecturers were educated, had an influence on their view of CT and its development. The encounters in higher education were implicit and explicit CT opportunities that they had to negotiate through the progressive levels of qualifications that they had achieved (Master's qualification). The influence of the disciplines in which they studied came to the fore in varied ways. The CT influences were viewed at two levels, firstly that which they had learned in their own higher education and secondly, the thinking that they had to do about being a HE pedagogue who was being asked about their constructions and enactments of CT in their lecturing work. It proved to be a challenging task to think about CT in this research situation. Nevertheless, many factors presented themselves for discussion. Amongst those factors, CT about the discipline was confirmed as a central endeavour (as opposed to transferability of CT outside of the discipline). The presence of a professional educator qualification was not uniformly responsible for a participant to be able to effect planning and enactment of CT, nor was it a deciding factor in discussing the pedagogy of CT. Where there was no other expertise to draw on, the participants relied on their previous biographical and programmatic experiences of and with CT.

Chapter Seven is dedicated to the discussion of what the themes entail and how their creation contributes to new creations of understanding of CT among lecturers in the P-STE environment.

PART THREE: ABSTRACTING FROM THE FIELD – BUILDING A THESIS

In this part of the study, themes from PART TWO Chapter Five and Chapter Six, which are a culmination of incremental and interconnecting interpretations of data and subsequently created data themes built across PART TWO, are examined from the perspective of assemblages (Deleuze & Guattari, 1994). Selected concepts of assemblage as an analytical framework coalesces with selected concepts from earlier theoretical framing (currere – reactive and active; FMTD). The expanded coalesced lens completes the theoretical framework to support Level 3 analysis in Chapter Seven. The Level 3 analysis discussion completes the conceptual coherence of the study. In Chapter Eight final conclusions for areas of CT covered in this study, considerations for empirical research, limitations and suggested future research are expressed. Chapter Eight concludes this study in which a theoretical view of CT among lecturers of P-STE is presented.

CHAPTER SEVEN: LECTURER CONSTRUCTIONS AND ENACTMENT OF CRITICAL THINKING AS AN ASSEMBLAGE

7.0 Introduction

The literature review presented in Chapter Two, comprising engagement with theoretical and empirical studies, sought to understand how CT has been theorised and practised over time and in the present. Chapter Two also constructed the first theoretical framework for this study. The policy and curriculum documents prescribing knowledge in the P-STE programme are among those that mandate CT. The mandate for CT was examined in these documents to explore policy requirements for the CCFO for CT.

A significant point emerging from the policy is that P-STs' lecturers are responsible for implementing CT. It is also noted that documents are grounded in the foundational principles of the WUT. This observation set the inquiry in motion, prompting reflection on how that ontological position might influence the contested space of SA HE. The contestation of knowledge led me to consider what effect this positioning might have on CT among P-STE lecturers in this study.

In addition to discussing how CT has been theorised and practised, the literature review offered insights into where CT is taught and how it is applied. Given the significance of the CCFO CT mandate assigned to lecturers, this chapter explores the curriculum and CT as integral partners and examines how lecturers construct and enact CT.

In Chapter Three, the original lens is joined by a curriculum reconstructionist lens (Pinar, 2011). Drawing on the conceptual forces of currere (Pinar, 2011), this approach focuses on contemplating the curriculum and knowledge that CT must critique. Active currere is a holding frame for how pedagogical approaches to enacting CT might be structured. A third lens, composed of the four forces of the FMTD – biographical, historical and political, institutional, and programmatic (Samuel, 2008) – allows for a close exploration of the influences that may shape individuals in constructing and enacting CT in P-STE.

In Chapter Five, the methodological tools designed in Chapter Four rendered raw empirical data from the field, which was handled in Level 1 analysis. In Chapters Five and Six's data

analysis (Level 2), the data re-presentations drawn into findings statements indicated how lecturers in this study constructed and enacted CT in prescribed areas of P-STE (module) knowledge. The reasons lecturers provided for building and enacting CT in the way they did are brought forward for a meta-analysis (Level 3) in Chapter Seven.

However, after creating the themes from the data presented in Chapters Five and Six, I believe the analysis benefits from including additional theoretical concepts. Consequently, selected concepts from the theoretical framework of assemblage (Deleuze & Guattari, 1987; 1994; 2008) are introduced to augment the first multifaceted lens. These selected concepts of assemblage are identified and explained, and a rationale for their inclusion is presented in the ensuing section. This chapter presents a detailed, interwoven understanding of the influences on elements of P-STE lecturers' CT within a multi-domain assemblage.

7.1 Overview of the chapter

This chapter comprises eight sections. The introduction revisits the concepts of the tentative original multifaceted theoretical lens from Chapter Three. It explains how data from the field will be interpreted. The explanation ensures an in-depth and nuanced understanding of how themes are derived. Assemblage is introduced as a new framework for Level 3 analysis of themes (7.0). The second section presents this overview, which guides the reader through the remainder of the chapter (7.1). The third section reintroduces the themes created from Level 2 data analysis (7.2). The fourth section expounds on how the original multifaceted lens, conceptual devices, and analytical framework of a territorial assemblage (Deleuze & Guattari, 1987; 1994; 2008) will coalesce (7.3). The fifth section examines the naming (nomenclature) of CT, the knowledge on which it is enacted, and how it is planned and viewed through the lenses of currerre, the FMTD, and assemblage. This section establishes the first stages of the analysis of CT (7.4). The sixth section explores the relational lines between pedagogy, knowledge (discipline), and CT to theorise how CT is enacted (7.5). The seventh section addresses lived experience as a possible conceptual inbound line of flight, creating a wishful view (outbound line of flight) of how CT may evolve (7.6). The eighth section presents a theoretical discussion on the territorialszation influences of the discipline on CT enactment. The influences of home, school, and HE, viewed through the FMTD lens, are considered inbound converging lines of flight that confirm the disciplinary territorialisation of CT. These inbound lines of flight illustrate the interrelatedness of concrete elements in an assembled view of lecturer CT (7.7). The eighth section is elaboration of findings and analysis of the study. It

captures the issues of complementarity, complexity, paradox and uncertainty of the CT in an assemblage (7.8). The final section assembles the understanding of how lecturers construct and enact CT (7.9).

7.2 Critical thinking themes

The themes below were created from Level 2 data analysis in Chapters Five and Six. These themes represent my interpretation of the data. I acknowledge that other interpretations may have been possible. However, I must respond to the research questions. The themes I created appear sufficiently extensive to fulfil this purpose.

The first question is: What are pre-service teacher education lecturers' constructions and enactments of critical thinking?

7.2.1 The themes created from Chapter Five are:

- naming critical thinking
- planning for critical thinking
- common knowledge, general knowledge, and lived experience for critical thinking
- discipline and dual discipline for critical thinking (first and second)
- critical thinking is discussed in terms of pedagogy and revealed by observing pedagogy

The second question is: Why do lecturers construct and enact CT in the way they do?

7.2.2. The themes created from Chapter Six are:

- home as a platform for critical thinking
- school as a platform for critical thinking
- higher education experiences as a platform for critical thinking

7.3 Assemblage as a complementary theoretical framework

7.3.1 Assemblage after Deleuze and Guattari (2008) - the worldview of the philosophical theoretical positioning of assemblage

This subsection introduces assemblage. Its theoretical positioning assemblage embraces fluidity, relationality, heterogeneity, flexibility, temporality, and complexity (Waterhouse, 2012). The philosophical, theoretical framework of assemblage (Deleuze & Guattari, 1987, 1994, 2008), promulgated from a political science perspective over decades, offers a conceptual lens for examining political arrangements that address classical political phenomena, such as rights, governments, and revolution.

Deleuze and Guattari (2008) identify four typologies of assemblage, with this discussion focusing on territorial assemblage. The concepts appropriated for this lens are discussed in a forthcoming section, outlining their usefulness and value in understanding CT (see 7.3.3).

7.3.2 The foundational concepts of all assemblage

Concrete elements are the first foundational concept of assemblage (Deleuze & Guattari, 2008). These elements are separate, independent societal structures or other entities of varying significance that can be arranged in countless different combinations and sequences. When set in specific ways and patterns, concrete elements constitute the abstract machine, which is the second foundational concept of assemblage.

Within the abstract machine, concrete elements retain their form unless altered from the inside. The elements themselves are not changed by the individual, although their arrangement may be modified through the individual thought processes that navigate, connect, and rearrange the elements within an assemblage. The abstract machine exists in a three-dimensional space.

The third foundational concept of assemblage is the persona(e), representing the individual (singular or multiple). In this research, the individual refers to the teacher, lecturer, or researcher. The individual is viewed as an agent/s, or "mobile operator", "runner", and intercessor" (Nail, 2017, p. 27), meaning that they are situated in the three-dimensional space in relation to the concrete elements and can position themselves accordingly. Not all elements are visible simultaneously, as their distance from the individual varies, and some may be obscured.

Therefore, assemblage acknowledges the interaction between society and politics – politics in a broad sense because Deleuze and Guattari (2008) assert that all assemblages are political (Nail, 2017, p. 28). Within this framework, the concrete elements relevant to this study include government, education curriculum and policy, knowledge, discipline, pedagogy, home, schooling, and higher education.

A fourth concept, relational lines, is addressed later.

In summary, assemblage consists of concrete elements, the abstract machine, and persona(e) working in concert. It is said to have an "internal dynamic through co-functioning of parts" (Hanley, 2019, p. 414).

The appropriation of a new lens for analysis does not displace the contributions of previous concepts from *currere* (reactive and active) and the FMTD. The new concepts augment and coalesce with them, highlighting underexplored aspects of CT, especially the connections and complexities between influences on elements of lecturers' CT in P-STE.

The interpretive power of the study is enhanced by the theoretical concepts discussed below. The inherent power of the study is illustrated through an examination of assemblage concepts, which are separated, joined, intersected, and overlaid with concepts from the original lens.

7.3.3 Concepts of assemblage for analysis of themes that inform understanding about lecturers' critical thinking

A curated list of concepts from assemblage are devices that assist in making sense of the thematic categories in deeper ways.

The key concepts drawn from the assemblage theory are:

- territorialisation and deterritorialisation[22]
- relational lines
- lines of flight
- stoppage
- bifurcation

7.3.4 Relationships between the concepts of currere, the forcefield model of teacher development, and assemblage that form the coalesced lens in this study

On introducing assemblage concepts as an additional theoretical framing for this study, the following points were noted. This section discusses how the lenses provide focus, helping to order, magnify, and understand the themes.

7.3.5 How the lens attends to macro-level elements of influence on knowledge and critical thinking

Currere proposes that the individual (teacher/lecturer) is influenced by government, economics, and politics (Pinar, 2011). In this study, this proposition helps confirm that programme policy directs curriculum knowledge and mandates CT. Policy is the director and communicator between the government (national policy) and the individual; both are concrete elements.

[22] US spelling (territorialization) used intentionally to indicate the term used in the theory of Deleuze and Guattari. UK spelling (territorialisation) used in discursive instances.

In this instance, concepts from *currere* and assemblage coalesce, as assemblage also asserts that policy directs knowledge and CT at a macro level. Pinar (2011) holds that curriculum knowledge is manipulated to suit government interests. Wallin (2010) challenges entrenched views on knowledge by asserting that the individual pedagogue acts as an interrupter of curriculum knowledge entrenchment (see 3.3.1). The lenses align on the matter of curriculum control, with assemblage confirming the influence of politics and economics on curriculum and knowledge.

The FMTD (2008) likewise acknowledges the power of politics and adds the force of history as an influence on the individual. This collective understanding of external influences on curriculum and knowledge indicates that *currere*, active *currere* and the FMTD share similar perspectives. This provides a starting point for examining how macro forces are conceptually positioned in relation to the individual. In this study, the individual refers to the lecturer responsible for implementing CT. The coalesced lens offers insight into how CT is constructed concerning macro elements.

7.3.5.1 How the lenses of currere, the FMTD, and assemblage attend to the position and power of the individual - a foundation for critical thinking

The ontological positioning of the individual in relation to knowledge and its inseparable ally, CT, must be understood. Assemblage offers a perspective on the individual in relation to others, viewing the individual as singular but existing plural with others (Deleuze & Guattari, 1994, p. 63-64).

Similarly, in the FMTD, the individual is presented as singular, while interactions with others are reflected in the surrounding forces – such as home, school, institution, and community. The ontological position of the individual in each of these theories is commensurate with the ontological positioning of the individual in the WUT. Awareness of this positioning offers a range of perspectives for considering CT and knowledge in the P-STE within the diverse SA context.

In assemblage, the individual is believed to exercise cognition and possess experience, therefore having agency (Nail, 2017, p. 28). The agency represents the individual's potential to position or reposition themselves in relation to concrete elements. From a critical theory perspective, this implies the individual's potential to effect change.

Wallin (2010) avers that the individual's ability to distance, approach, and move in relation to policy, knowledge, pedagogy, and, in this study, to think critically is a powerful means of interrogating one's patterns of connection between concrete elements. The ability to effect different arrangements is a form of empowerment, aligning with Pinar's (2011) conceptualisation of the individual. The individual is central to freeing the mind from entrenchment, seeking new paths and conceptualisations of knowledge and thinking about knowledge.

In this context, the individual could be the lecturer arranging their assemblage of CT, making them integral to the assemblage. Additionally, the agency in assemblage could refer to the researcher arranging their interpretation of lecturer CT in the study while simultaneously re-arranging their abstract machine – an assemblage emerging from thinking about the study's findings. The assemblage concept is valuable at multiple levels in the final analysis. Waterhouse (2012) posits that the value of the assemblage theory lies in its metaphorical function and capacity to introduce movement, connection, and action to this chapter.

7.3.5.2 How assemblage might provide insight into the position and power of the individual exercising/enacting critical thinking

Assemblage contributes to the notion of change by conceptualising how the individual can rearrange concrete elements such as knowledge and pedagogy to alter thinking about knowledge and the influences shaping these rearrangements.

The conceptual force of *currere* sees Pinar (2011) urging individuals to exercise agency through disruptive pedagogy to foster change. Wallin (2010) advocates for creative pedagogy that re-routes thinking about knowledge and its critique through a form of CT. The changes envisaged by this combination of conceptual devices drive transformation. Change occurs along relational lines between elements as they shift and evolve. As a result, the abstract machine adopts new arrangements, reflecting an assemblage of shifting understandings. The individual is an intercessor and an integral part of the assemblage, existing within and shaping its structure.

7.3.5.3 Assemblage for building a relational understanding of lecturers' constructions and enactments of CT

The fourth foundational concept offered by Deleuze and Guattari (2008) proposes that in an assemblage, the individual arranges connections between the concrete elements along relational lines. Some are well established and can be entrenched in particular patterns,

sometimes forming cyclical arrangements around and between concrete elements (Pinar, 2011) or activated into new patterns (Wallin, 2010).

Rearrangement occurs when elements shift, or the individual actively pursues a line and finds that it can and should be altered. At this point, lines may diverge from entrenched patterns, forming what Wallin (2010) terms lines of flight. These lines represent new thinking, new knowledge, new directions, and new relationships – an extension of Pinar's call for individuals to adopt disruptive pedagogies to alter relationships between concrete elements.

Other relational lines are less established. Left untouched, they will remain as they are or fade into obscurity. Some lines are unexplored, ignored, or obscured. Just as significantly, exploring the less examined spaces between concrete elements can reveal new insights and stimulate further exploration. Peering along these lines and into the spaces involves looking where there is no apparent reason to look, constituting a powerful analytical device for uncovering new and deeper explanations (Papastephanou & Angeli, 2007).

In the FMTD, the forces of biography, politics, history, programme, and institution (Samuel, 2008) are concrete elements influencing the individual as an intercessor in the assemblage. In a coalesced lens, the relational lines between these forces also operate across the concrete components of the assemblage, magnifying the influences acting on the individual as they arrange their abstract machine (assemblage).

Territorialisation and deterritorialisation are conceptual devices in assemblage, highlighting how the relational lines enable movement and change within the assemblage.

A significant theoretical contribution to this analysis is that the relationships between the themes set out earlier are not yet understood. Assemblage offers the conceptual device of relational lines, which will help establish how the themes are connected.

7.3.6 The analytical framing of contributions of assemblage to Level 3 analysis

I believe that assemblage lends purpose to Level 3 analysis. Assemblage is described as "general logic at work" Deleuze (2008, as cited in Nail, 2017, p. 21). This logic is not meant to state and repair the elements of assemblage. On the contrary, it refers to explaining relationships and exploring possibilities logically.

The coalesced conceptual devices of the theoretical framework of this study are now the positions, layers, lines, and spaces that enable the researcher to gain breadth and depth in the analysis. This is explained in more detail in the ensuing section.

7.3.7 Territorialisation and deterritorialisation

Territorialisation and deterritorialisation, concepts advanced by Deleuze and Guattari (2008), assist in analysing themes. Territorialisation refers to the creation and existence of boundaries that circumscribe current, established, or entrenched ways and understanding within concrete elements. These boundaries may encompass one or a group of concrete elements arranged in specific patterns and linked along relational lines. Deterritorialisation is the antithesis of territorialisation (Deleuze & Guattari, 2004, p. 268). It represents the dissolving of boundaries or halting of understanding or thinking along relational lines. This effect can result from territorialisation, for example, when the impact of the discipline on CT is envisaged in a particular way and remains unchallenged, which can be seen as territorialisation by the discipline. The discipline itself can be deterritorialised in the way it handles CT. This occurs in the concrete elements and along the relational lines between them. When a force disrupts, for example, shifting thinking along the lines of the discipline, a stoppage occurs. At the stoppage, bifurcation emerges. A re-routing of thinking can occur at the bifurcation (Deleuze, 2004, p. 269-270), resulting in no movement (stasis) of concrete elements and/or no rearrangement along relational lines in the individual's assemblage of CT. The stoppage is often caused by a lack of awareness or consciousness, preventing novel thinking. The opposite could also occur at the bifurcation. Wallin (2010) indicates that the relational lines can be extended into new places and directions by liberating pedagogy – these are the lines of flight he discusses.

Deterritorialisation is thus a "typology [form] of change" (Deleuze & Guattari, 2004, p. 269), as it illustrates the inherent power to rearrange assemblages at the stoppage where the truncation occurs. Ultimately, the assemblage worldview, which allows and encourages thinking about the connection and reconnection of elements in new and ever-changing, transformational ways, can offer new insights into CT in P-STE. Nail (2017, p. 34) supports the view that "Deterritorialisation is the way in which assemblages continually transform and / or reproduce themselves."

Assemblage supports this chapter in three ways. It lends conceptual devices that help magnify aspects of the individual, knowledge, and concrete elements in interpreting the data themes. Furthermore, in this study, assemblage is utilised as a holding frame on which findings are

suspended while being analysed and interpreted – a framework for my thoughts arising from the analysis. The assemblage provides a framework that helps to understand the arrangement of elements in the study, aligning with the temporality of the interpretivist approach. Braun and Clarke (2022) emphasise the imperative for a researcher using thematic analysis to form, hold, amalgamate, suspend, and re-form readings of findings. I must clarify that assemblage as an analytical framework does not intend to maintain all points in a temporary holding pattern that can be misinterpreted as never taking a direction or decision. Rather, assemblage is a conceptual framing for building an interpreted understanding (my assemblage) of lecturer constructions and enactments of CT.

The chapter benefits from continued suspended contemplations. Assemblage allows the researcher and reader to suspend thinking in analogous relationships, enabling ideas about themes of CT in this analysis to be moved around. Assemblage embraces uncertainty, providing an ideal approach for this study while offering a means to bring reliability and dependability to theory-driven interpretations of lecturer constructions and enactments of CT.

7.4 Assemblage, Currere and the Forcefield Model of Teacher Development

7.4.1 The Western university tradition's foundational principles prevail

In a territorial assemblage, knowledge is assigned as a concrete element. Chapter Two discusses how conceptions of knowledge are dominated by foundational principles arising from the WUT. CT is likewise steeped in the worldview of the WUT. Most of the literature in this study emanates from English-speaking countries that subscribe to foundational principles developed in classical European philosophy. The interpretations presented in this thesis are also shaped by a researcher whose academic traditions are situated in the WUT worldview. The earlier discussion addressed the contentious forces or concrete elements (history, politics, and economics) acting on knowledge in SA HE aiming to contextualise where CT occurs.

A discussion of the policy documents mandating the programme of knowledge and CT in P-STE further indicates the deeply-embedded WUT foundational principles present at a programmatic level. These documents reference only scholars in the WUT. Despite the

contentions[23], knowledge and CT remain rooted in the WUT worldview. From a macro-level perspective, Pinar (2016), whose report evaluates the SA education curriculum, describes the hegemonic dominance of the WUT in SA HE as sinister and requiring reconceptualisation or overturning. except for one lecturer, this position was not discussed. Rather than ignoring such a finding because of its lack of mention, Deleuze and Guattari (2008) and Braun and Clarke (2006) would argue that an idiosyncratic finding holds significant value. Its importance lies in the need for foundational principles to be brought under robust academic consideration. At the level of the individual lecturer, the FMTD would be useful in suggesting reasons for the lack of overt comments about seemingly unquestioned and undisturbed foundational principles of knowledge and CT. The forces of politics and history have silenced scholars of all races across South Africa for decades prior to 1994 (see 1.2.2), and the lecturers in this study fall within an age range that implies they were schooled during the apartheid era.

Addressing the contentions of knowledge in the WUT would require critique, which lecturers may not yet have pursued or may not be prepared to pursue. Nevertheless, it remains a significant topic in HE that must be explored. A general tenet of assemblage proposed by Deleuze and Guattari (2008) is that the lecturer (personae) can think. Additionally, the potential for thinking is not reliant on any other elements or arrangements to formulate their thinking. For these reasons, it is theoretically expected that lecturers should question the foundational principles of the knowledge and CT they apply (Pinar, 2011). Samuel (2008) similarly emphasises the individual's independence but notes that having the aptitude to act does not equate to the will or interest to do so.

Possibly, the contested nature of knowledge in the current SA HE context was not considered relevant in a discussion about CT. Neither were the foundational principles of CT addressed. It is reasonable to believe that the apparent lack of engagement with these contested principles implies an inert acceptance – knowledge taken for granted without further thought – what Paul and Elder (2001b) assert is often the case. This is a precarious and concerning issue in P-STE, where lecturers are at the forefront of implementing CT in education. The deep searching in the aporetic factor posited by Papastephanou and Angeli (2007), would be a powerful generic suggestion for exploring the WUT worldview among lecturers in a South African context, from

[23] Decolonisation, denigration of Indigenous Knowledge Systems and African perspectives, the demand for global preparation for the Fourth Industrial Revolution and digitalisation

personal and professional perspectives, but I note from the work of Mahabeer (2020) and Maldonado-Torres (2007), that it is not easily achieved unless the lecturer is aware of her or his embedded traditions. This study aims to expose these personal and professional dimensions as both pragmatic and theoretical gaps of present literature interpretations.

This finding exemplifies entrenchment, where pursuing new paths or relational lines between politics, economics, society, knowledge, and its critique remains undisturbed. Pinar (2011) asserts that the relational lines between concrete elements appear deeply entrenched in reactive *currere*. Furthermore, Pinar (2011) would consider this a triumph of macro forces – history, politics, and economics – that have established hegemonic relationships epistemically and individually. In pursuit of constructions of CT, the researcher suggests that lecturers may not question the foundations on which knowledge is created and critiqued because the ontological assumptions of the WUT are embedded in SA policy and curriculum documents. This argument is also noted by Altbach (2010); Amin (2016) and Pinar (2016).

Understanding which principles are foundational to knowledge and CT and how history, politics, and programmatic forces interact as influences provides enhanced clarity on how CT is understood and implemented in practice. Based on the themes derived from the data, a conceptual assemblage framework begins to be constructed for this study. As these themes are discussed, they will be suspended in various configurations within the framework until they can be arranged in a temporally logical structure, contributing to an abstract machine (Waterhouse, 2012). This structure is also an assemblage. One such theme is the naming of CT.

7.4.2 Deterritorialisation as a conceptual device for understanding the naming of critical thinking in the discipline

Deleuze and Guattari (2008) propose that concrete elements can be created and destroyed. This concept is applied here as an analytic device for examining a theme that addresses the naming of CT. The concrete elements in this theme include nationally prescribed programme curricula for P-STE, knowledge types, WIL, and other components frequently viewed as intersecting subsets of one another while also encompassing central aspects of the education system. Across these documents, the mandate for CT in P-STE module T&L is included (SAQA, 2000).

"The concrete elements drive the process of progressive itinerant change" (Nail, 2017, p. 31). When a concrete element changes, relational lines that previously joined it to another concrete element may also shift. Knowledge, as a concrete element, is a creation of society – a symbol

of what is deemed valuable and useful or what has come to be understood as such. It is not unusual to assume that a discipline is a subset of the broader body of knowledge within an institution, arranged within prescribed programmes of study. Given this perspective, a lecturer acquires programme knowledge and the accompanying CT as part of becoming a graduate and lecturer in one or more disciplines. Specific relational lines are established between the academy, knowledge in the P-STE programme, and the discipline, influencing how CT occurs across and within them. This explanation provides insight into why lecturers name CT in relation to the discipline they lecture (modules taught by lecturers in this study).

Lecturers' voices are "heard" in interview transcripts responding to what they consider CT. They consistently name CT in relation to their respective disciplines. The discipline represents knowledge over which authoritative groups within the academy establish values, skills, attitudes, ownership, and control. Moore (2009), cited in Vorster and Quinn (2017), highlights the importance of questioning what imbues knowledge with power. Lecturers within a discipline recognise the commonly accepted positions and terminology, becoming steeped in its conventions (Barnett, 1997; Phillips & Bond, 2004).

Thus, the discipline is a subset within the concrete element of knowledge in the P-STE programme, and CT is assigned names for the discipline's purposes. The range of CT names identified in this study is unsurprising, as it reflects the confines of the P-STE programme, previously identified as grounded in the theoretical foundations of the WUT. Similarly, the naming of forms of CT is commensurate with those found in the literature on CT in the WUT. As Fox (1994) suggested, naming CT is a common feature of empirical studies, particularly those focused on CT pedagogy. This is reported in empirical research by Bellaera et al. (2021), Barnett (1997), and Moore (2013), where CT is identified through terms such as problem-solving, finding solutions/equations, analysis, synthesis, and developing empathy.

As stated earlier, the empirical literature on CT is rooted in the WUT and disciplinary contexts. This does not imply that exclusively theoretical contemplations of CT do not exist, as plenty do exist (Halonen, 1995; Halpern, 1999; Van Gelder, 2005). The naming of CT in this study reveals strong relational connections to the WUT perspective, the discipline, and pedagogy. Further discussion on CT pedagogy will follow.

The names assigned to CT vary according to the disciplines (modules chosen for this study) from which they originate (McPeck, 1981). Some names appear generic across disciplines,

such as problem-solving, decision-making, developing discernment, and developing ethical awareness. Lecturers describe CT as applicable to various knowledge sources – written, spoken, visual, auditory, academic, and experiential.

A challenge in observing and discussing CT in this study was recognising that some forms were concrete and others abstract. In practice, some cognitively based forms of CT may not have been observable. Some instances of CT were applied to concrete knowledge, and others to abstract knowledge. Abstract forms of CT, being less tangible, may not have been verbalised or explicitly acknowledged. This challenge confounds, to some degree, if one is noting constructions or enactments of critical thinking which Golden (2023) suggests may be the case. The lesson to be extracted from the theme is that CT is complex.

The theme indicates that CT was named primarily concerning disciplines or life in general, as opposed to contexts such as workplaces, vocations, or trades. Some names that might be expected to be discipline-specific were not necessarily so. Examples include analysing, deducing, evaluating, critical awareness, critique, and critical attitudes. CT does not occur as a comprehensive range of all possible forms but rather as a selection within each discipline. The names identified are commensurate with the forms of CT assigned to various disciplines, as discussed in the literature review.

A potential for cross-disciplinary engagement with CT is evident, but the practice of applying CT across disciplines, as advocated by Moore (2011), was not encountered in this study. These findings support the view that CT is vast, and even within the scope of this study, some forms eluded detection. Furthermore, certain forms of CT may not have been recognised as CT because their presence in the T&L space was tacit, making them difficult to name or explain.

7.4.3 Critical thinking - a discipline (concrete element) or an applied vehicle for critique

Deleuze and Guattari's (2008) concept that concrete elements have standalone characteristics led to thinking that CT might be a body of academic knowledge. It is a discipline in its own right and perhaps also assumes the status of a concrete element, given its extensive coverage in fields such as philosophy and educational psychology. CT as a concrete element is not changed by lecturers; it has its iterations within the body of the CT discipline and a timeline of its development.

Thinking of CT in this way helps to grasp its vastness, which makes it difficult to define. It also helps to recognise that lecturers understand CT at the time of its occurrence confirming

the view of Fox (1994) that lecturers intuitively know what CT is (tacit) but not necessarily being able to explain (explicit) how to implement it. Providing the explanation above reinforces that CT is a form of knowledge which might exist within its own discipline. This led to the thinking that CT, when applied to knowledge, acts as a vehicle moving along relational lines and attaching itself to the individual understandings shaped by the prevailing trends of the CT discipline. CT then critiques knowledge in the P-STE. Recognising CT in these two ways provides a means to interpret what underlies its naming and how it might have informed lecturers' perspectives over time.

This thinking aligns with the notion that the WUT may not territorialise knowledge in P-STE solely with sinister intent. Likewise, seeing CT in new ways does not imply that it is territorialised by the WUT but rather that it is appropriate, credible, and sufficient for the moment in which it is situated. From another perspective, it is not CT that is static but the intercessor who elects not to investigate along unexplored relational lines.

In this study, the discussion of theoretical perspectives of CT encountered in the literature tends to include logic (formal and informal), reasoning, argument, metacognition, consciousness, and others. Over time, there have been changes (iterations) in thinking about theories and types of CT in theory and praxis, arising from schools of classic philosophy and later educational psychology perspectives (Barnett, 1997; Bolwell & Kemp, 2005; Ennis, 1989; Facione, 1990; Hitchcock, 2018; McPeck, 1981; Wallace, 1882).

As reflected in the theme, the theoretical underpinnings used in naming CT are those commonly found in education programmes for P-STE, which are established and referenced in the WUT. As noted in (3.0), those foundations are in question. The age of the theories forming the foundational principles of CT is discussed in this study because they appear outdated and rooted in a single Western university tradition. As stated previously, no theme in this study emerged around lecturers' thoughts on the suitability of the WUT foundations for knowledge or CT with the exception of one lecturer who mentioned briefly the incongruence of portions of the content knowledge in a diverse student group. According to Bounani (2013), Chimakonam & Uchenna Ogbonnaya (2021), Higgs & Letseka (2022), Horsthemke & Enslin (2009), and Odora-Hoppers (2022), this is not unusual, as they argue that the WUT hegemonic force has colonised SA education. Colonial hegemony is criticised for its role in shaping knowledge and CT, but CT (as a discipline in the WUT) has been territorialised. Its present forms are the received naming and practices in the WUT, which lecturers have offered as their

understandings of CT irrespective of their diverse biographies in relation to race, ethnicity, home language or schooling.

Over long periods, these iterations and naming have become entrenched (*currere*) norms among dominant groups within the CT discipline and those engaged in CT in the WUT. Consequently, the discipline controls how lecturers name CT and the type of CT it promotes. The relational line along which the naming of CT is understood by lecturers is well developed.

7.4.4 Naming and planning critical thinking – a stoppage and bifurcation

Given that the discipline territorialises the naming of CT, it might be construed that a lecturer's understanding of CT is sufficient and complete and that it will naturally translate into planning. However, the general logic of assemblage (a means to analyse bit by bit) dismantles that notion. A stoppage can occur – halting at the point of naming with the belief that the discipline's naming is adequate. However, stoppage can result in bifurcation.

Various factors might result in a lecturer declaring in planning that CT will be implemented, with little thought or conscious understanding of how that would occur. Alternatively, a might declare CT in planning with a sound understanding of the CT names recorded in institutional documents. The ensuing section discusses how lecturers plan for CT.

7.4.5 Planning for critical thinking

This study observed that lecturers named CT and also declared, in institutional documents, where they would implement it (see Table 5). However, it was not immediately evident how they received the mandate to do so. Constructive alignment of policy, curriculum, teaching and learning, and assessment anticipates a linear pattern with some feedback loops (Biggs, 2014). In this study, curriculum knowledge, institutional policy for CT, the lecturer, and CT planning declarations did not follow a straight-line process. The CT mandate did not reach lecturers through direct reading of documents but rather, as indicated in the data, through a directive issued within the institution.

Determining the path of this relational line highlighted the realisation that policymakers assumed lecturers, due to their employment position in the P-STE environment, were aware of the curriculum or policy documents. In the instances examined in this study, CT entries were recorded, possibly as a compliance measure. Including CT-related terms in institutional documents did not necessarily indicate an understanding, nor did it ensure implementation. It also did not specify how CT would be implemented. It is worth noting that the CCFO CT is a

requirement for all HEIs to implement. Had the data been gathered in a public university, rather than an independent HEI, the conceptions of CT may have manifested differently. I claim that for two reasons: 1) There are separate programmes designed to educate lecturers on higher education practices such as CT, offered by higher education institutions in South Africa (MUT, 2021, RU, 2021, UKZN, 2021a). There is no evidence to suggest that similar is offered in independent institutions 2) I am suggesting that perhaps the exposure to the contentions of knowledge is experienced more intensely in public HEI settings than in the space of independent HEIs.

Although the national CCFO CT mandate was communicated to lecturers, no theme emerged that elaborated on the institution's role in this process. This implied that a detached institutional approach may have failed to promote and support CT implementation – leaving support incomplete or possibly ineffective. Weak relational lines between policy intention and implementation, as reported by Astleitner (2002), Sayed (2004), and Vithal et al. (2005), appeared to exist.

Examining the contextual spaces between concrete elements of politics and education of the past reveals that, in pre-1994 SA education, a dearth of policy documents is characteristic of the education landscape. Furthermore, these documents were not readily available to practitioners. Some lecturers, due to their age, may not be aware of these documents' existence or where to locate them. Others, particularly those without professional education qualifications (including some in this study), would not be familiar with professional compliance-type documents. Additionally, not all HE documents are available in the public domain (Carmichael & Stacey, 2006). Lecturers also may lack full awareness of their significance.

Reliance on the institution or collegial information has the potential to create gaps in understanding CT requirements in P-STE. Seeking such a policy for themselves might not be a primary consideration for lecturers. The CCFO CT has been a neglected aspect of education for decades and it would continue to be so given the data that this study has provided. Nevertheless, there was evidence of CT being recorded in planning documents.

The statement in SAQA (2000, p. 20): "… how the methodology of critical outcomes, will be developed within context is in the hands of the practitioners", is contradicted by America & Le Grange (2019) and Mpofu & Maphalala (2017), who state that no guidance is provided on the

implementation and pedagogy of CT at a national level. As lecturers rely on the territorialisation of CT by the discipline to name and declare CT in institutional documents, it could be anticipated that the discipline would also inform pedagogy. However, this anticipation might be a stoppage point at which the planning is either implemented or ignored due to a lack of support.

Up to this point, lecturers' constructions of CT have been understood through relational lines of differing strengths, the exploration of spaces between concrete elements, and the identification of points where lines cease or bifurcate. The non-linear path of lecturers' views on CT is diverted, becoming increasingly complex. The ensuing section provides insights into how CT is enacted.

7.5 Enactment of critical thinking

The discipline territorialised the naming of CT, and despite the documents providing limited assistance or clarity of what CT was and how it was to be implemented, the institution directed lecturers to plan for it. With apparently little support for the CT mandate, planning was expected to translate into implementation. The implementation was revealed through pedagogy.

7.5.1 Pedagogy as an indicator of critical thinking implementation

The theme:

- Critical thinking discussed in terms of pedagogy and revealed through observation of pedagogy,

demonstrates the strong relational line between lecturers' constructions and enactments of CT. Lecturers discussed their constructions of CT in terms of pedagogy. It should not be surprising that CT understanding was situated in pedagogy.

The findings in this theme contradict the views of Halonen (1995) and Mpofu & Maphalala (2017), who contend that many practitioners do not know how to implement or practice CT. Some lecturers found expressing their views on CT simple to navigate, while others were tentative or less forthcoming. Significantly, all discussion was framed in terms of pedagogy.

The methodological design of this study presented lecturers with the opportunity to speak of CT using examples from practice. However, this may have inadvertently created a stoppage point at which a broader discussion of CT became marginalised. This connects with an earlier

statement about the lack of theoretical or pedagogical explanation of CT in curriculum and policy documents (Pinar, 2016). In this study, lecturers discussed CT in pedagogical terms. The omission of discussion of theoretical aspects of critical thinking, may be attributed to the absence of formal education in the discipline of critical thinking at an institutional level, perhaps within staff development or formal courses from outside providers of higher education practices.

The first part of the discussion below focuses on pedagogical approaches employed for T&L knowledge in modules included in this study. The pedagogy for teaching knowledge in the discipline proved to be a determinant of how CT was implemented in lectures.

7.5.2 Knowledge pedagogy and critical thinking - their relational lines

In the theme "Critical thinking discussed in terms of pedagogy and revealed through observation of pedagogy", lecturers' relationships to knowledge (ontologically) were revealed to some extent by two means.

a) The sources of knowledge that lecturers perceived as relevant in their disciplines

Rather than repeating this information here, see Chapter Five. The ontological relationship between lecturers and knowledge affected pedagogy in terms of design, understanding, and execution of CT. When designing study letters, lecturers determined what knowledge was relevant to the module.

b) Pedagogical planning

Lecturers decide on the approaches to adopt and how to incorporate CT. As stated previously (see Table 5), CT was either a prominent or less prominently declared feature in that planning. In the study letter, CT was not the driving force behind pedagogy but rather a consideration for inclusion.

This research found that planning reflected approaches or methods for T&L knowledge but not for CT per say. Through my lecturer observations and analysis of interview transcripts, it could be deduced how lecturers viewed the knowledge they were to teach. This included the sources and resources they valued, the approaches they employed, how they utilised these sources and resources, and how CT was activated concerning both.

The sources were indicative of those typically encountered in their disciplines, although some exceptions in the sources used are discussed in detail later. How they approached their teaching – *alone*, *alongside* the students, and *for* the students – are three examples on a continuum (see

5.3.5.4). The most authoritative and controlled approach involved the lecturer as an authority who imparted the prescribed knowledge – "alone" (at one end of the continuum). "For the students" refers to the expert lecturer, confident in delivering the intended knowledge, building concepts and modelling the experience for the students in a set of processes resembling strong guidance, e.g., constructivist approaches to T&L. "Alongside" refers to the lecturer who planned the lecture in such a way that the lecturer and student shared and exchanged knowledge.

How lecturers set different levels of access and interaction with knowledge during the lecture was significant. However, I can report that the stance adopted concerning pedagogical engagement with knowledge (alone, for, and alongside) is not the same as planning for, admitting, engaging with, or ignoring opportunities for CT in lectures. Students were encouraged to think about the knowledge. Facione (1990) postulates that not all cognitive processes are necessarily CT, and not all thinking skills amount to CT. The significance of this statement is that a lecturer may simply require the student to be the inert recipient of knowledge.

The relational lines between lecturer pedagogy and CT are strong and provide a comfortable way for CT to be addressed as compliance or as a safe endeavour in pedagogical moments designed for the purpose. In this study, lecturer pedagogy illustrated a strong but unique linkage with CT. As a strict guardian of knowledge, secure in disciplinary knowledge, multiple and meaningful teaching moments for CT and engagement with CT among students were intentionally crafted. This signalled that control over knowledge and CT could be exercised effectively. Another lecturer expected students to engage with knowledge actively and critically, directed towards disciplinary knowledge and adopted a more liberal approach to how disciplinary knowledge was critiqued.

The pedagogical moments for CT were either created, allowing students to engage in CT or were not. In these examples, a distinction is to be made between the way that knowledge is viewed and treated, how the lecturer views the knowledge and their authority over it, as opposed to how CT is permitted to enter the lecture and the extent of coverage it receives. Deleuze and Guattari (2008) assert that concrete elements, such as knowledge, are arranged in unique patterns along relational lines (concerning the lecturer in the context of this study). Each lecturer forges different relational lines to students in pedagogical situations. The way lecturers

consider themselves experts or guardians of knowledge, the permissions they allow for interaction with students, the knowledge, and the type of critique permitted are interlinked.

It was understood in the planning document that while specific knowledge was declared the focus of the observed lecture, it did not guarantee that CT would automatically be part of that plan. Furthermore, I noted that the way the lecturer approached pedagogy for teaching knowledge was not always commensurate with the extent to which they admitted CT into the lecture. The theme also revealed tension between planning and implementation that could have easily escaped notice. In this theme, CT was declared in various sections and with varied frequency across the planning documents (see Table 5).

Examples in the theme indicated that when there was only one declaration of CT in the institutional document, the participant lecturer struggled to articulate CT in the interview and identify CT moments in pedagogy. In contrast, when CT entries were frequent and distributed throughout the document, CT occurred more frequently in the lecture. Participants also spoke at greater length about their identification of CT. Their contributions raised questions about how much CT should be included in planning documents, which sections it should appear in, and how frequently it should be addressed.

These aspects are not stipulated in the policy, implying some fundamental information about CT expectations and enactment remains unknown. The lecturers did not mention institutional requirements, and as stated previously, the institutional role in supporting CT could not be determined.

It is also worth considering the depth of CT required. The policy does not specify this, and the literature selected for this study does not address these points. However, I recall encountering such considerations in the work of Paul Kegan, "*In over our heads: the mental demands of modern life*", which discusses cognitive development in adults and the depth of thinking.

It might have been reasonable to expect that CT would critique knowledge of the discipline, indicating that the mandate was being fulfilled. In this theme, CT was directed almost entirely towards discipline knowledge. The discussion of the ensuing theme offers insights into long-debated relational lines outside the discipline, specifically regarding CT beyond discipline boundaries. The theme is particularly relevant in the SA P-STE context due to its potential relational link to lived experience.

7.6 Deterritorialisation of the discipline and territorialisation of CT by inbound lines of flight

Experts have debated, for decades, the transferability of CT skills beyond the discipline and the academy (Ennis, 1989; Facione, 1990; McPeck, 1981; Paul, 1984). The debate is inconclusive whether CT is transferable, or whether CT should be transferable (Moore, 2011). Evidence in this research points to the applicability of CT outside of the discipline, in an unexpected sense. This thinking about CT explores the notion of how the discipline that territorialises CT is deterritorialised by the inbound line of flight of lived experience. The lived experiences then territorialise CT along new relational lines. Firstly, a stoppage occurs; at the stoppage, an inbound "line of flight", proposed by Wallin (2020, p. 11) is received, which deterritorialises the discipline. As it does so, it shows the potential to territorialise the CT. The territorialisation of the CT is representative of the opportunity to take a new path (line of flight) and further the "exploration along the relational lines of assemblage" (about CT) (Deleuze & Guattari, 2008). The analogous concepts lend analytical structure to this chapter while the theme from Chapter Six - *common knowledge, general knowledge and lived experience for critical thinking* assists in building responses to the critical questions.

7.6.1 Deterritorialisation and new (inbound) relational (line of flight) – lived experience for furthering understanding of lecturer CT

Relational lines between elements have been representative of how the lecturer relates to concrete elements that exist in understanding CT. Notice is directed to newly forged relational lines of flight that are *inbound* in this study. The inbound lines might originate in previously-obscured spaces between elements that await strengthening in an assemblage, or perhaps they could be newly forged. Evidence in the theme of *lived experience for the lecturer's construction of critical thinking* receives detailed attention from factors of biography (lived experience) that orbit the individual (lecturer) which Samuel (2008) has stated can and will affect the individual lecturer (in CT endeavours). I cannot claim that inbound lines of flight are a new phenomenon, instead they represent new perspectives in this study.

A founding tenet of active *currere* is that the personae (lecturers) do not arise *ex nihilo*. Instead pre-existing *lived experience* is seen as a vital component for mobilising and sustaining the pedagogy that is activated by it (Wallin, 2010). In this research, lived experience, and common knowledge were deemed, by lecturers, to be significant in effecting CT. They desired and needed this input, alongside disciplinary knowledge, as a component of CT pedagogy. It is a point to note then that it was deemed important for common knowledge to be present in lectures

for CT to take place. It was partially established what it is constituted of when lecturers in this study stated the need for its presence lectures where they identified enactments of CT. The lecturers referred to "general" and "common" knowledge as: "'being aware of surroundings", "taking note of news", and "events in the past and present". Factors such as those that emanate from the biographical force - race, gender, religion, culture and schooling, make for infinite permutations of what constitutes lived experience (Samuel, 2008), which surely is the informant of common knowledge and common sense, and general knowledge. The main issue is that in the contested landscape of knowledge validity and legitimacy in South African HE, common and general knowledge could well be the undocumented forms considered "lesser" that have been denigrated, devalued, and become "invisible" (not of the WUT). Possibly it is that which is precisely referred to as common knowledge that is simply not common or accessible to all because of the diversity of lecturers with differing biographies, who have a lived experience that is comprised of unique language, culture, ethnicity, religion, and schooling experiences. The diverse nature of common and general knowledge in a diverse SA society that has a racially divided past may preclude the lecturers or, lecturers and students within it from knowing each other's common and general knowledge. Perhaps the separate nature of that socially engineered apartheid has given rise to lecturer statements that they need common and general knowledge to be part of lectures and CT. An assemblage of common knowledge or general knowledge is unique to each lecturer and student, that being said, the CT to be formulated to critique that knowledge may need to be unique. The common knowledge and sense of it to which lecturers in this research refer quite frequently, is potentially, a large unexplored concrete element.

How, then, do the relational lines change around concrete elements to embrace an inbound line of flight that is lived experience? I pose this question because this research shows that by engaging the concept of deterritorialisation, the discipline that has territorialised understandings of CT thus far, is deterritorialised/interrupted. Lived experience surges into the space of the discipline to enter the debate of whether common knowledge and general knowledge are admitted as worthy of CT and if so, what that knowledge is composed of, and what the CT would be comprised of to critique it.

McPeck (1981) and Papastephanou &Angeli (2007), strongly refute the idea that CT can be exercised against these forms of knowledge for a variety of reasons, one of which includes the belief that those knowledges lack depth. Barnett (2004) offers that only incomplete judgements

can be arrived at as a result of the knowledge being only 'general' or 'common'. McPeck (1984) suggests that CT is exercised when there is a critical element present that is worthy of the effort that will be expended on it. If common knowledge or common sense is viewed as unworthy of CT, then it must depend on who is the judge of what is common knowledge or common sense. If the common knowledge or common sense is substantial and substantive then more expansive capability is given, and more need is summoned for CT to be applied. It appears that the theorists and lecturers hold differing views about forms of knowledge that are worthy of CT. Despite the contestations of those theorists, it is not yet known if there is some separate form of CT that should be enacted against lived experience and common knowledge in comparison to academic disciplinary knowledge.

In pursuing an outbound line of flight, such deterritorialisation of the discipline offers the insight that lecturers are looking for to understand their students and what is expected in CT. This could be achieved through CT that honours communalism and a holistic engagement with knowledge, rather than CT based on the individual ontological knowledge relationship perspectives found in the WUT. Communalism would bring the perspective of alternative understandings of sharing, collaboration, and permission to speak individually and collectively to the lectures. Thus, the theme in this study which makes express reference to lived experience, is indicative of a new perspective on the previously contemplated aspects of what CT is applied to (disciplinary knowledge). However, this is a suggestion, and it is not precisely what lecturers claimed; it is simply a line of flight developed as a result of the conceptual lines of flight, which are anticipated in an assemblage framework, which is also the theoretical framework of assemblage in this chapter.

That lecturers summon the presence of common knowledge and general knowledge to the discipline and admit it to the academy strongly suggests that it warrants CT. Disciplinary knowledge is no longer the single worthy recipient of critique inside the academy. Perhaps this moves towards the transformation goals which anticipates the lecturer will implement so that CT can be a contributor. I hasten to add though that the lecturer moving towards sharing knowledge with and from students may not be a development of the oneness in the sense of African philosophies that Higgs and Letseka, (2022) discuss. It is more that the independent thinker in the WUT (Thayer-Bacon, 2000) continues to think and plan individually but admits the co-operation and sharing promoted by the WUT educational psychology teaching and learning collaborative approaches into the lectures. Those are different approaches; they do not

encourage deep understanding of otherness in multiple directions among students from diverse backgrounds of the South African context. Within the reviewed literature there is little that speaks to the lecturer working in the South African context where deep learning is developed. Indeed, how that is to be achieved may be reliant on language and culture which are but two of the influences on forming perspectives on CT.

The idea of how CT is enacted in this study is offered next.

7.7 Critical thinking as doing and being

To understand how lecturers *enacted* critical thinking, it warrants clarification that *enactments* were any act in which the lecturer identified themselves as doing or thinking CT (Golden, 2022). Some enactments were visible and others abstract, based on concrete or abstract knowledge or materials. Three examples of the enactments of CT are presented as being informed by the discipline. Deleuze and Guatarri's (2008) notion of territorialisation assists in refining the understanding enactments of CT identified and enacted by lecturers. It happened in the way that the discipline offered a) *extreme territorialisation for critical thinking* b) *moderate territorialisation for critical thinking* and c) *dual territorialisation for critical thinking*.

7.7.1 Extreme territorialisation for critical thinking

Wallin (2010) and Pinar (2011) insist that the *currere* force robs a teacher/lecturer of a pedagogical life. It can be seen that there is an assumption that all lecturers are pedagogues. Pedagogy calls for a professional teaching qualification. However, it is common that lecturers in HE, including (P-STE) do not hold a professional teaching qualification. It might be assumed that the CT is in jeopardy of not being implemented or enacted. The lack of education teaching qualifications might be viewed as a concern on several points, not only for CT. SAQA (2000) lays so much store by CT as a CCFO of education, that it views educators (lecturers) who fail to implement it as being irresponsible.

A lecturer without formal teaching qualifications could be seen to fall to the territorialisation of the discipline to effect CT. In one instance, complete reliance on the discipline for CT seemed necessary. The lecturer claimed that everything he did in the lecture was critical thinking, all naming of critical thinking was derived from the discipline. Ennis (1989) issues the caveat that there is a danger that deep knowledge in the discipline can hinder CT because of the entrenched attitudes and beliefs in the discipline; they are unconsciously and uncritically

developed. Similarly, Facione (1990) avers that not all cognitive processes are necessarily about critical thinking. The demonstrations and explanations of processes and skills, observed in the lecture where extreme territorialisation was prevalent, CT was described to be aimed at disciplinary knowledge. The foundations of disciplinary knowledge appeared entirely uncontested. The knowledge was rested in the rules and axioms found within the discipline. The teaching of processes and skills was completely captured by the pedagogy of the discipline, while how to enhance CT was considered to be the exercise of more practice and thinking about facts, axioms, rules, relationships and processes found in the disciplinary knowledge. Attaining the accurate and correct solution related to facts and processes of the discipline was paramount in this instance. Attaining the correct solution was itself an indication that CT had been activated and that it had been successfully applied.

The disciplinary knowledge was the focus of the lecture. It appeared that in the absence of professional education qualifications, the lecturer was provided with a pedagogical approach to teaching the knowledge that had been experienced in personal encounters in the discipline (in which the lecturer held postgraduate qualifications). It was not deemed necessary to ensure that the teaching of CT was overt action. The lecturer needed to present and model the CT needed to be successful in arriving at correct answers in the discipline. This would be an implicit approach recommended by Abrami et al. (2008); Bellaera et al. (2021) and Ennis (2018). Possibly the lecturer assumed a self-sufficiency in silent thinking about CT. Such intrinsic handling of CT was considered to be a pinnacle of academic prowess. It was noted that in the interview discussion, the lecturer did not use the language of pedagogy. Laymen's terms and analogous examples of CT, which were recounted in terms of the lecturer's own lived experience of CT were used. An alternative explanation for the CT enactments claimed by the lecturer would offer that the disciplinary knowledge taught in the module called for a specific type of CT to be enacted against it. Possibly in sciences or mathematics, the lecturer's silent contemplation and cognition about knowledge went undetected in a situation where the researcher was not a scholar of mathematics and sciences. Perhaps too, CT was present, and it was of a nature that does not ask for any other form of CT to be explicit. This would mean that it was only required that the lecturer was able to explain the section of work of the module observed in the lecture at length, to demonstrate that he understood the thinking required for that module. Nevertheless, in theorising up to this point, it was indeterminant if overt, explicit CT was enacted.

CT was territorialised by the discipline at a previously unimagined level. The circumstances I have explained are recognisable as resulting in a bifurcation and a paradoxical situation. The lecturer's pedagogical situation of being without formal professional education qualifications might be viewed as resulting in a stoppage – (possibly not being able to demonstrate CT, or not being able to articulate its employment). Instead, a bifurcating effect at the stoppage showed that territorialisation by the discipline (that has previously been implied to be constrictive and controlling) became a strong relational line that the lecturer could follow to bring about CT. It could not be established whether the lecturer recognised the territorialising power of the discipline in informing CT. The territorialising power of the discipline was seen to add some value to pedagogy. This territorialisation seemed to create an extremely self-sustaining package of CT for the lecturer to utilise. Literature does not take account of the power of the discipline from the perspective of its helpful role (motivating inertial force) in the instance where there is no formal knowledge of pedagogy (formal educational qualification). This then means that a self-sustaining package of disciplinary knowledge and experience encompassed the naming of CT, forms of CT and pedagogical approaches. The biographical as an inertial force could suggest another explanation. The lecturer could have opted for the comfort and familiarity inherent to adhering to familiar ways; a tried and tested means to bring about enactments of CT. The discussion above shows a new aspect informing enactment, which runs slightly contrary to the reactive *currere* view of Pinar (2011). The discipline as a controlled portion of education does not rob the lecturer of a pedagogical life. Instead, the lecturer who was not professionally qualified was sustained by the discipline to at the least, be able to attempt enactments of CT. This was not the single example of a self-sustaining package of knowledge and CT, provided by the discipline; a further discussion is given broader consideration later in this chapter (see 7.7.3). In the meanwhile, *territorialisation* of CT shown differently is visited in the next section.

7.7.2 Moderate territorialisation for critical thinking

In another instance, where once again, the lecturer's formal teaching qualification had not been attained, a different aspect was shown of how the discipline territorialised the CT enactments. Overt explicit, deliberate enactments of critical thinking were evident and discussed. Pedagogical terms for discussing learning of knowledge and CT were present throughout. Perhaps my familiarity with disciplines in the humanities had conditioned me to look for specific forms of CT typically associated with the humanities, and therefore it seemed that in contrast to the earlier extreme territorialisation example, the pedagogy and CT enactments in

the humanities module were well-developed. The absence of a professional education qualification seemed to be compensated for by years of experience in teaching and learning in HE.

In the third instance, the lecturer held a professional teaching qualification. The second and third lecturers provided a discussion about their CT enactments using terms of pedagogy. Each named the CT in the context of the discipline and activated CT against the disciplinary knowledge – a territorialisation by the discipline. There were instances in the interview transcripts where lecturers were tentative about the appropriateness of their identifications of CT enactments. Their confidence increased during the course of the interviews. The themes formed from data sets showed these lecturers named and discussed a wide variety of CT enactments. Respectively, Rudd (2007) and Mpofu & Maphalala (2017) claimed that CT is a skill and that the teaching of the skills is challenging. The two lecturers were seen to work with the students in different ways using differing resources (appropriate to their disciplines) to effect CT.

From the themes arising from data in this research, once again, the discipline was central and powerful in determining enactments of CT. There was a deterritorialisation bifurcation at which point the lecturer was seen to decide how CT is implemented. Within the discipline lecturers display two trends a) guiding the type of CT that occurs and what it will be activated against, and b) regulating how daring and adventurous the CT will be. I noted little deviation from that position of safety. It is interesting to observe that the absence of a formal teaching qualification is not necessarily a determinant of how the enactment of CT occurs concerning the aforementioned points. An extension of those thoughts is taken up later in the chapter (see 7.7.5) where the lecturers' voices are brought to the fore to suggest why this is so.

7.7.3 Dual territorialisation for critical thinking

The relational lines concept is invoked again. An additional line connects the discipline and CT. If the single discipline territorialises the CT, then it must be said that finding two disciplines informing CT deterritorialises thinking about how CT is enacted. I clarify the claim by adding that few studies in South Africa address that dual disciplines might be of consequence in CT enactments. In SA, many undergraduate degree programmes require that a student attain success in two major subjects which culminate in an NQF Exit Level 7 qualification. I offer examples of a lecturer who might have studied geography and sociology,

geography and educational psychology, or history and a home language. Secondly, I will use two of the examples to illustrate how lecturers in this study combined the learning of two major subjects for teaching and learning, and even for discussing the pedagogy and enactment of CT.

It cannot be assumed that a lecturer who is secure in the disciplinary knowledge of one or even two disciplines will be inclined or be prepared to implement CT, or that they are even informed about CT. It was noted in more than one of the instances that the learning from two disciplines was used to design and describe CT enactments. In the example of a combination of History and Home Language, pedagogical devices used in literature were deemed suitable for enacting CT in the context of history. The pedagogy was underpinned by the use of historical sources, while the approaches and techniques were from among those frequently utilised in the discipline of languages (use of audio and/ visual materials, film, cartoons, reading and analysis of written passages, verbal questioning, written questioning, discussion and comprehensions).

In a different example, the use of a different combination of dual disciplines namely, Geography and Educational Psychology, were used to encourage CT. The lecturer was observed building disciplinary knowledge through questioning and the use of diagrams and visual material drawn from the first discipline. The pedagogical rationale was described in terms of concepts from child and adolescent developmental theory after Piaget (1969) and Vygotsky (1978). The knowledge of the discipline was expanded by the lecturer doing the CT for the students using the building blocks of pedagogy encountered in cognitive developmental psychology. The disciplinary knowledge was very closely guarded by the lecturer-as-expert, and the CT that was claimed to accompany it was closely controlled employing heuristics, logic, process, and other closed-ended approaches. From one perspective, this approach guaranteed that the knowledge of the discipline was delivered and that the "right answer" would be provided, just as Sears and Parsons (1991, p. 60) proffer is often the focus. On the other hand, it could have been an attempt to scaffold the learning of content and its assessment to move the students closer to the completion of the module. The teaching moments for CT appeared scarce yet the lecturer consistently claimed that CT was being enacted. This might have been thought of by the lecturer as being the application of CT to form new knowledge. Perhaps the moments of dissonance, assimilation, and accommodation were regarded as moments when CT was required. The examples refer back to the pedagogy discussed earlier in this chapter. The discipline, either single or dual was seen to inform the planning for enactments of CT. Barnett (1997), McPeck (1981), Young and Muller (cited in America & Le Grange,

2019) attest to the power of the discipline, however, this section has presented a discussion that shows CT forms a new relational line of dual disciplines as an new element in the enactment of CT.

It is not known if the approaches of one discipline to effect CT in another results in CT that is any less or any more suitable or enriching, than that achieved by remaining within the practices of a single discipline. The dual-disciplinary approach should not be mistaken for the interdisciplinary approach to CT as offered by Gibbons (2000), and Moore (2011), in which academics in different disciplines collaborate across disciplines. Instead, there were isolated individuals who applied this in their pedagogy. At an analytical level of the framing of this chapter, the influences of individual and dual disciplines are territorialised and occasionally deterritorialised. Many theorists have contemplated the significance of the discipline in enacting CT but it is not a feature named in the FMTD. I suggest that it is considered. The lecturers in this study have strong relational lines to the discipline.

7.7.4 The discipline territorialises its own critique

It would be a considerable shortcoming of this study if it was not noted what CT enactments were seen to be aimed at. Some critical thinking enactments were designed to be open-ended, insofar as the lecture was designed to include teaching moments that would address CT about the disciplinary knowledge, but also with some view that it might extend into CT about wider societal issues that the discipline could address. Such planning was mentioned only briefly by lecturers but in observation of the lecture, additional insight was gained. Another approach more often noted was to confine/direct CT to the disciplinary knowledge only. As stated earlier, driving factors which constrained and enabled CT were that the lecturers controlled the CT opportunities and experiences (see 5.3.5.4), to ensure that the time allocated for the lecture was used judiciously to cover the disciplinary knowledge because it was going to be assessed. An important determinant of whether CT would be a feature of the lecture was whether there was time to do so.

Another common feature of the study was that CT was activated against disciplinary knowledge - partly because it was ‘safe material’ for which there was a familiar way of approaching critical thinking. It was seen that even in the case of the most pedagogically adventurous lecturers, CT was activated only against disciplinary knowledge. Where that disciplinary knowledge was intrinsically contentious, the lecturer was courageous and well-prepared. I have raised in earlier chapters that the complete open-endedness of CT may not be

welcome, especially in the way that "lines of flight" suggests, or in the way that critical pedagogues promote. Also, not in the way of critical theory which undergirded the ideological views of the SA anti-apartheid liberation movements pre-1994.

Up to this point, it seems that 'lines of flight' that embrace uncertainty and possibility (Wallin, 2010) were not activated by any participant. Only moderate approaches to enacting CT were noted. Given the historical and political forces that have orbited lecturers in SA (Samuel, 2008), the role of reticence to engage in CT of anything beyond the discipline or in challenging ways is contemplated in this discussion. Reticence may arise for a number of reasons. In a political sense, CT underpinned many of the ideologies of anti-apartheid movements. Sometimes from socialism, communalism or Marxist perspectives. Individuals who openly aligned themselves with these perspectives were considered enemies of the apartheid state. Perhaps these perspectives are avoided even today. In a post-1994 social sense, reticence arises from concern for causing offence or hurt, avoidance of broaching uncomfortable topics or avoidance of being seen to challenge authority; including academic authority. According to the evidence in this study, the ramifications of a lecturer 'overstepping the mark' in the process of teaching and learning CT, is a reality which could be construed as undesirable (for the institution, socially, culturally, and politically), possibly even resulting in severe consequences. The 'overstepping' is easily done in politically/socially, correct/sensitive settings which are prevalent across the country and globally (see 2.2.2). Critical thinking is thus seen to be influenced by the lines that are laid down in relation to historical, political and biographical elements in an assemblage. The relational lines can deterritorialise the concrete element of discipline in such a way as to permit only a limited range of thinking to be activated in the enactment of CT.

The national level criticism levelled at practitioners that CT has not been implemented as widely and strongly as the mandate anticipates (see 2.5.2) warrants attention. Before CT became a CCFO mandate in SA P-STE, teachers and lecturers were trained to kowtow to the (state, religious institution, independent) employer (Hartshorne (1992), cited in Suransky-Dekker (1998)). That single claim is enjoined by commentators who state that effects of this nature continue to make their presence felt in SA HE and in HE institutions across Southern Africa (Amin, 2016; Du Toit, 2001; Msibi, 2016; Korateng & Odame; 2023). The conceptual force of reactive *currere* is seen to be in play adjudicated by successive power structures over time. It is worth considering the comment of McPeck (1981) who suggests that CT does not always consider the consequences of CT, which might be greater with more liberal and

politically-aligned critical thinking. This study strongly suggests that the discipline territorialises its critique and perhaps regulates the extent and depth of CT that the national documents criticise for being inadequately developed. As Pinar (2016) intones; the state should be careful about what it promotes in the curriculum and policy of which the CCFO CT is a part. It should be clear about what CT is comprised of, what it is engaged against and what it seeks to achieve.

As this chapter unfolds it is seen that lecturers know about CT. It is declared in planning. The lecturers declare how they will implement CT. Critical thinking is implemented and some explanations are provided for how the lecturer navigates the pedagogy of CT. With little assistance from policymakers and the institution, the discipline is seen as the provider of guidance. The enactment of CT is driven by the discipline. A full picture of constructions and enactments of CT is not yet completely assembled, the next section provides insight into why lecturers construct and enact CT the way that they do, thus adding to the assemblage.

7.7.5 Relational lines of flight – inbound and converging - home, school and higher education for the CT assemblage

In this section, the concept of "lines of flight" (Wallin, 2010) is analogous to how they contribute to understanding why lecturers construct CT the way that they do. The influences of *home*, *school,* and *higher education* are conceptual forces of biography and programme that do not operate individually and exclusively (Samuel, 2008). The biographical force includes school experience which in SA meant the historical/political forces in the apartheid era. That encompassed a variety of curated and dictated school programmes for the individual based on race and ethnicity, thus all forces of the FMTD are brought into play.

In this study, it was shown that the home could be a place where CT was encouraged and welcomed, albeit for differing reasons. In the first sense, it was non-academic, for example, to encourage questioning and sensible living. In the second sense, it was intended as a precursor to independent thought and academics. In some instances, the home did not encourage CT at all. I could not conclude that the influence of home was of little significance if a lecturer claimed that CT was not encouraged or was absent. Perhaps that meant that CT would have been welcome had it been raised. In some instances, the influence of home on CT seemed to contribute overtly to the early formation of lecturer CT constructions. The variety of responses in this study did not suggest any pattern related to age, gender, culture or language – biography.

Few claims referred to the influence of schooling (biographical and programmatic forces) as a promoter of CT; particularly no mention was made of primary school. This finding statement coincides with the views of a variety of commentators on CT in SA schools who confirm that CT was not encouraged (Carmichael & Stacey, 2006; Jansen, 2013; SAQA, 2000; Sayed, 2014). Lecturers claimed that they became more critically aware in the higher grades of high school, however, it was not a uniform response, and it was indicated that being outspoken or broaching contentious matters was not encouraged. The most profound influence on the development of CT was found to be higher education. This constitutes the overlap of biographical and programmatic forces (Samuel, 2008).

Higher education was where the first encounters with CT were intense and unlike any experience or requirement, of a programmatic nature, that had previously been required of lecturers. All but one of the lecturers in this study entered either a college of education or university (HE) for their undergraduate study before 1994, so the National Qualifications Framework had not yet been devised. Nevertheless, despite many comments throughout Chapters One and Two about the dearth of CT, the data theme showed that at the undergraduate stage of education, the CT requirement became noticeably demanding and even donned an official mantle in the form of being named explicitly and practised explicitly. The exposure to CT was said to have occurred as a result of deliberate, overt and explicit institutional CT directives which academics in (the participant lecturers' own HE programmes) were required to implement, thus following the notions of Abrami et al. (2008), Bellaera et al. (2021) and Ennis (2018) that deliberate, overt teaching of CT is more beneficial than an 'immersion' model in which CT is taught implicitly. Not all lecturers made claims of the latter. In other instances, the CT was not made explicit (Glaser, 1985; McPeck, 1981; Resnick, 1987). Reflecting on how lecturers themselves were seen to implement CT in their pedagogy could have been influenced by experiences of such practices.

The exposure to CT in undergraduate studies in HE was so demanding in contrast to high school experiences that it was described as a culture shock and a new experience. In other instances, the opportunity for CT took the form of an invitation from the lecturer for students to provide an opinion or deduce or infer information from various lecture resources.

Lecturers reported the experience of regular schedules of small group tutorials facilitated by an academic or a senior student. Motivation to attend was provided by the incentive to earn marks. The requirement for CT was made explicit and expectations for engagement were high. The

latter indicated that the institution provided time and resources for CT to be implemented and practised. These seemed to be on a smaller scale than institutionally initiated and funded endeavours of CT that have been encountered elsewhere. Ennis (2018) led a national generic Critical Thinking Across the Curriculum programme in the US where the generic programme was in place to teach CT within the discipline. Programmes of greater or lesser extent require sustained funding and commitment at an institutional level (Barnes, 2005). It appears that some institutions provided such funding and support to facilitate CT engagement.

Notably, it seemed that the CT discussed by participants was aimed primarily at the discipline in some of the modules for which they were registered in their undergraduate studies. Again, the territorialisation by the discipline was the focus of the programmes of study undertaken by the lecturers.

The points that lecturers made about their HE undergraduate CT experiences, appeared to link to how lecturers in this study declared and implemented CT and in the way they explained their enactments. The lecturer's undergraduate HE CT experiences did not appear to link to biography; for instance, neither the school, race, age, gender, or religion of the student was influential. However, there were other patterns to be noted.

In instances where lecturers in this research declared in institutional documents that CT would be implemented, and then how they implemented their pedagogy, it could be seen that their approaches in many ways mirrored and arose from how they explained the demanding undergraduate CT experience. For instance, where they had been provided with a rich array of resources, they attempted to replicate that for their students. In the instance of the lecturer who termed the CT demand in HE as a culture shock, the lecturer attempted to ameliorate the demand made on students for CT. The lecturer employed a scaffolding process that would lead to new knowledge formation. In the instance of a lecturer whose own lecturers had posed very demanding CT challenges, the lecturer structured the CT teaching moments with approaches and materials from a second discipline. The lecturer whose own CT journey was broad and varied, structured CT opportunities across the discipline to include events in the public domain as an enrichment experience.

In most instances, it was indicated that the demands for CT became incremental with the years of study leading up to the award of their own Master's degree qualification. Their claims showed that as they progressed through the postgraduate degrees, CT experiences required

them to keep pace with the National Qualifications Framework Levels (SAQA, 2012). The progress through higher degree completion deepened disciplinary knowledge. It was stated in some instances that the CT that accompanied it was also deepened. Where a lecturer seemed to hold the most expansionist experience and view of CT construction and enactment; where the lecturer seemed the most confident in their discussions about CT; the lecturer whose biographical and programmatic HE experiences were rich, and where the lecturer held a Master's degree in a discipline, it was difficult to identify enactments of CT that were not directed at disciplinary knowledge. The discipline is dominant, as a concrete element in the shaping of the lecturer as an undergraduate student and of the lecturer in their role of implementing CT in P-STE – they are locked into a strong binding of cyclical relational lines - a terrarium effect.

Home, school (biographical forces), and the HE programmatic forces are incoming lines of flight (converging relational lines) that contribute to alterations of an assemblage that is the lecturer's constructions and enactments of CT.

As an analytical device, assemblage concepts arrange the thoughts and understandings of lecturer CT. Along with the conceptual devices of the multi-faceted lens, a coalesced lens has been formed with the analytical devices of assemblage. Out of the coalesced lens understandings, a framing emerges on which thoughts and understandings of lecturer CT are suspended. From the temporally suspended understandings, elements of assemblage gather to be arranged into an assemblage. The assemblage facilitates the wholeness of the lecturer constructing and enacting CT and the rationality of those positions in ever-changing arrangements. Assemblage is a holding frame from which to contemplate all things critical.

7.8 Elaborating the findings and analysis of the study synthetically

In this chapter, P-STE lecturer constructions and enactments of critical thinking (CT) are moved towards being understood as an assemblage of separate, joined contradictory, complementary and sometimes disjointed, divergent components of understanding. The concepts of assemblage (Deleuze & Guattari, 1987, 1994, 2008); reactive and active *currere* (Pinar, 2011; Wallin 2010); and the Forcefield Model of Teacher Development (FMTD) provide a coalesced lens which has served as a theoretical framework that interrogates components, tolerates relationships, indicates connections and flows, suspends the components of understandings for contemplation, and accommodates their re-arrangement (in endless

combinations). The lens magnifies the minutiae of the policy terrain, curriculum knowledge, institutions, biographies, politics, history, economics, programmes, disciplines and lecturers. This study concludes findings in a complex, three-dimensional, relational, layered and even dispersed perspective of lecturer constructions of CT, which are held suspended in a temporal framing of assemblage, which is needed in contemplating how the perspectives of this research bring new insights about lecturer constructions and enactments of critical thinking.

As concrete elements of assemblage, curriculum and policy documents are not altered by individuals but are created by forces of politics, history and economics. The documents mandate CCFO CT as a contributor to epistemic transformational goals for South African (SA) education. Curriculum and policy documents only partially articulate what is specifically to be transformed which has had the effect of leaving those spaces for iteration and interpretation in early-stage SA democracy. Largely the same set of documents set out the mandate for the CCFO CT. This study highlights that these documents state intention and indicate where CT is to be implemented but expanded information on what CT is and how it is to be taught is absent. The lack of clarity about CT proves to be too little information for purposes of implementation in the pedagogy. Collectively the lack of clarity between these areas of education has created weak relational lines between lecturer understandings of what CT is, what CT is to be enacted, and how it is to be enacted. The knowledge requirements for P-STE are well articulated, well-understood and well-grounded. Implementation of CT is based on policymakers' assumptions that understanding CT as a phenomenon is universal and that implementation of CT is axiomatic (because it is declared in the policy).

The intention to implement CT is expressed in policy that is theoretically referenced and informed by the hierarchical arrangements of knowledge traditions, legitimised in the endorsed fields and disciplines, based on the intellectual traditions of the Western university. The legacy of the WUT territorialises the curriculum and policy documents intensely. The documents declaring that CT is to serve transformation and simultaneously proving to be inconclusive about what is intended by mandating the critical cross-field outcome (CCFO) of CT, results in a range of repercussive uncertainties that pervade the assemblage of CT that has been shaped in this chapter. It is ironic that curriculum and policy documents that decry the poor state of CT in SA education, and the lack of CT achievement of practitioners and students in the education system, are themselves unclear about the details of CT. Irrespective of the irony, one

certainty that exists is the responsibility placed on the practitioner for the implementation of CT.

The individual practitioner (lecturer) in P-STE is presented with knowledge conceived of in the ontological perspectives of the WUT. The study references the marginalisation of 'other' forms of knowledge, preferred in some transformational perspectives, because other knowledge is welcomed only insofar as it is convenient for the WUT, signifying strongly connected relational lines connected to ontological knowledge constructions presided over by guardians of disciplines. If knowledge is referenced in the WUT, then CT is referenced in the WUT because they reside in the same set of documents. Beyond doubt, the relational lines between the WUT, knowledge and CT are strong. The lines encompass the elements of history, politics, discipline and economics, programmes and disciplines in a reactive *currere* entrenchment.

Due to the curriculum and policy that regulates P-STE knowledge, the programmes of study are presided over by disciplines. The disciplines are seen to be powerful determinants of what is considered worthwhile knowledge and what knowledge is worthy of CT. While it could be expected that curriculum and policy documents supersede the authority of disciplines, this study shows otherwise. The knowledge is encapsulated in disciplines, and there, it is decided what knowledge is included in modules. The lecturer responsible for planning and implementing CT does so with the discipline as the director of what is worthy of CT.

CT is isolated within the discipline and the lecturer perhaps does not seem to question that isolation.

A policy-level assumption is that CT is universally understood. This is a symptom of the territorialisation of policy and curriculum documents by the WUT. CT is not universally understood, nor is it named or described consistently in the documents, nor are the methods of its implementation articulated in the documents. CT is referenced in the discipline which is itself comprised of knowledge ontologically positioned concerning the WUT. When the lecturer can use the vocabulary of CT in verbal and written forms in institutional documents and conversation respectively, it is easy to mistake such use for understanding what CT is. It is simply a promissory note and it does not signal a triumph of policy in achieving its stated intentions. The recording of words in documents does not convey the understanding of the meaning the lecturer assigns to the text. Policymakers assume that the CCFO CT mandate

documents reach lecturers in a clearly defined pathway. The relational line between policy documents and lecturers is sometimes non-existent. At times, as seen in this study, the institution intervenes in an ineffectual way to provide instruction to implement CT in planning. However, the institution omits to elaborate even the scant details that exist in official documents, thus missing an opportunity to ameliorate poor understanding.

The conventions of the disciplines favour the WUT ontological positioning of the individual concerning knowledge in which the lecturer is assumed to be a self-motivated, autonomous agent. The prowess of the individual thinker in academics is measured in the ability to name CT in ways that adhere to the schools of critical thinking rested in theories of Western scholars. CT is promoted as rational thinking, reasoning, promote problem-solving, objectivity, argument, logic, and debate. The evidence points to the employment of a range of CT types which are concrete and abstract, applied to concrete and abstract knowledge and situations. The success of the lecturer is measured in the achievement of CT, that being rather mechanistic, which signifies a training element where CT may serve to challenge knowledge. It is a surprising point that the lecturer does not engage with the tools to transform thinking itself in the sense of metacognition. The study points out that theoretical views that might be expected to be integrated into planning, in HE, to effectively create CT pedagogical moments are not a strong feature of practice. This study reports that little attention has been given to the theoretical informants of CT. The discipline does not demand this engagement, and it is not engaged in any depth in the context of this study. In the HE environment where engagement with theory is anticipated, demanded and frequently accompanies knowledge, it is surprisingly absent.

A measure of the success of policy to realise CT is surely that CT is implemented by lecturers in their teaching. This study confirms that a partial success of the policy is seen where CT is declared and implemented in response to the instruction of the institution. The institution is indirectly charged with implementing the CCFO CT outcome, but it is seen to defer to the lecturer for how that occurs. Thus, the assumption of the institution is seen to be that the lecturer will implement CT as required. Declaration by the lecturer to implement CT, as recorded in institutional documents, is a minimal representation of what it means to implement CT. Indeed, implementation occurs but enactment of CT is contingent on the lecturer's understanding and choices of pedagogy. A minimal institutional contribution results in a gap between planning and pedagogy, and space is open for the discipline to territorialise the implementation of CT. The strong relationship line anticipated between the institution and lecturer is poorly developed

because the institution also does not articulate what CT is and how it can be implemented in pedagogy - perhaps interpreted as a lack of readiness to address CT requirements. The concern is that CT is left to be addressed by the territorialising, monolith of the discipline. There is a disconnect between implementing and supporting CT to prepare students for all of the roles that CT policy undertakes.

In the study, CT was implemented as observed through pedagogy. When pedagogy is engaged, it represents the moments in which the lecturer enacts CT, exercising the choice to take lines of flight or remain within the bounds of disciplinary conventions. Their pedagogies result in enactment informed by the discipline, a personal epistemological perspective, the ontological relationship present in pedagogical moments, and prevailing lecturer experiential circumstances.

How the lecturer positions himself or herself in terms of the value placed on knowledge and sources, and how the lecturer positions himself or herself concerning students (as knowledge expert or knowledge co-constructor) influences how CT is approached in pedagogical situations. The lecturer is a gatekeeper of what knowledge is admitted to the lecture room. Likewise, the CT permissions extended to students in the lectures are dependent on the lecturer.

The contradiction between the CT implemented by the lecturers in comparison to the stated policy intentions of CT is concerning. The discipline prevailed throughout, thus confirming that the discipline with its norm-related nomenclature, practices, beliefs, values, skills and attitudes is dominant. The CT discussed as enactments in pedagogical terms suggested that the CT was a set of outcomes to be achieved, and a set of skills to develop. The CT is not simply a skill to be mastered but it should be a practice that provides opportunities to transform knowledge and it must include the capacity to critique its thinking. It is poorly understood that the discipline can set out CT that critiques knowledge but fails to critique its thinking about CT. The discipline is capable of operating in isolation and the discipline does not require revisions of thinking itself that arise from CT.

On the other hand, the discipline as a territorialising force provides stability and framing and a form of coherence of knowledge and CT. Lecturers who have no formal professional education qualifications, and those with qualifications, finding little assistance from policy and the institution, find some guidance (sometimes complete guidance) in the ways of CT in the discipline. Evidence suggests that the discipline enables CT, and in that sense, CT is achieved.

The study reveals a further concern that the discipline has developed a *currere* force that is a maintenance mechanism for knowledge that it seeks to promote. The discipline is the regulator of what is brought under critique and how it is critiqued. Knowledge in the discipline is brought under critique but not the foundations of thinking which are left uninterrogated.

Recognizing that CT is defined in terms of the perspectives of the discipline confirms an earlier statement that CT is not universally understood; it cannot be universal if the understandings are discipline-related. This study has indicated that CT as an inherited understanding in the discipline does not provide a systemic understanding. Its understanding is contingent, informed by multiple considerations specific to the discipline, and CT is situated in familiar practices of the discipline. The influence of two disciplines has been seen to territorialise CT in pedagogical situations. How experts of one discipline might commentate on the findings is not furthered in discussion in this chapter but it opens new lines of flight for investigating a range of issues about CT being informed by dual disciplines. Without a clear understanding of CT, knowledge becomes uncontested and thinking about it becomes inert. According to the policy intentions, this position should not be tenable, however, the potential does not go unobserved.

Evidence is not provided in this study about how CT in the disciplines is linked to CT beyond the discipline. The territorialisation of academic knowledge by the discipline, in dealing with knowledge within the P-STE programme, might suggest that lecturers do not construct knowledge outside of the discipline and that the CT is, therefore, also not applicable outside of the discipline.

The study is assisted by the concept of active *currere*, which identifies inbound lines of flight capable of contributing new perspectives which relate in some way to the matter of CT outside of the discipline. Evidence shows lecturer interest in lived experience, common knowledge and general knowledge which deterritorialises the discipline knowledge. This knowledge, often believed to be unsuitable for academic purposes, is brought to the academy by students to disrupt WUT disciplinary knowledge as a dominant element that deserves the mental effort of CT. The suggestion that differing forms of knowledge are set down by lecturers as being important in lectures in the study intones a demand for escape from disciplinary confinement. The common knowledge and general knowledge indicate an opportunity for expansion of knowledge bases sought after in transformation (essentially a line of flight that deterritorialises the discipline). Consequently, there is an alteration within the concrete elements of knowledge and curriculum. Changes in the concrete elements affect the potential re-routing of the

relational lines and changes in spaces between concrete elements that have been in staid patterns. While indicating the desire for new knowledge to be admitted to the academy, taking account of other forms of knowledge in pedagogy is not straightforward. The debates of decolonial, post-colonial, and critical theory theorists, among others, insist that other forms of knowledge do not want to be tolerated or included, they demand to be foundational which is a point that is made by whose view seems to be accurate and helpful in understanding the extent and intensity that accompanies new moves of this nature

It demands implementation, however, admitting other knowledge to planning and lectures does not guarantee that CT will be implemented, although its presence would be a strong catalyst and opportunity for thinking in new ways. Furthermore, admitting new forms of knowledge is indicative of the ingress of other kinds of knowledge but not the same type encountered in literary theoretical deliberation about CT transferability in the literature in the WUT. Admitting common knowledge, general knowledge, and lived experience is a novel finding in this study that infers a means to address a goal of SA HE transformation that seeks parity of knowledge. Despite the lecturer's views of other types of knowledge that should be present for CT to take place, it has not yet occurred, however, it indicates a potential line of flight to follow.

Given that clarity of what CT constitutes is not abundant at policy and institutional levels, greater articulation of what constitutes critique must be sought to bring about parity of thinking about knowledge. It would be unsuitable to admit other knowledge to the lectures to simply view it through the existing WUT lenses. A dearth of support for CT in the institution infers that it has not yet developed structures to formalise and sustain new inbound lines of flight, nor its outbound potential to bring about some degree of transformation in that pursuit of admitting other knowledge to the academy. However, that potential progress can be somewhat undone because thought must be given to the CT that will accompany the other knowledge. Consequently, it is recognised that other knowledge is not a primary source for CT. The lines of flight are indicated but they do not materialise. CT conceived of in different ways and from different perspectives would be a crucial component of achieving transformation goals at a level of epistemic knowledge.

Curriculum and policy documents which envisage CT, as a transformative tool, and the disciplinary structures do not coincide in their efforts to transform. The disciplinary structures do not take account of the policy vision as it territorialises knowledge and CT. Consequently, the discipline does not move effectively toward the goals of policy. This introduces the idea

that CT should receive more attention in the institution in terms of alignment of purpose and clarity of expectations. At present audit for CT is not contemplated. Frequently contention arises in HE at the mention of audit because of its reputation as a compliance to serve technicism and accountability structures in HE administrative levels. Placing that requirement on institutions, lecturers, and disciplinary structures speaks of control which the spirit of CT and the purpose of CT seeks to oppose. The paradoxical messages of the mandate and CT in practice surface repeatedly. Imposing structure by auditing the implementation of CT does not guarantee what it will critique. Audit as a structure of compliance must itself be the target of critique about its purpose and structure. For an audit to be effective, it is required that the mandate is clear about its purpose.

7.9 Chapter synthesis

An understanding of what lecturers' constructions of critical thinking are and the rationale that develops for this is presented as an ombre of evidence and reasoning, not sudden and compartmentalised, but unfolding. The influence of the concrete elements that exert themselves on lecturers has been named. They are largely concrete elements but experiential elements are integrated into those as the assemblage and the FMTD propound. One cannot be separated from the other because the influences are implicit in each other, superimposed, intersecting, separate, complementary, and contradictory.

This assemblage recognises the strong relational link between specific disciplines encountered in lecturers' high school programmes, and their HE programmes that have shaped constructions of CT. Continuous immersion in the CT experiences of the discipline, across the phases of education, has contributed significantly to the construction of CT and its enactment. At the individual lecturer level, the discipline and its knowledge is the foundation on which CT is constructed. The disciplinary knowledge is constructed in high school and the progression through degrees, reaching then into the pedagogical space informed by those inputs. The Kantian view that the individual deliberately pursues an education and gains knowledge through active and deliberate means is exemplified throughout the data. This pursuit is accompanied by CT to greater and lesser extent throughout the education journey.

The report of minimal CT influence from home and early years of schooling serves to intensify focus and verify evidence of the strong relational lines between experiences of the discipline, programme, and current CT constructions. The minimal support of home as an influence on

CT is an example of how the small acts of being taught to think independently and with purpose contribute to the early development of CT among lecturers in this study. Those moments for CT, however small, may have contributed to the construction of CT and its enactment.

Nevertheless, it is seen that the lecturer does not construct knowledge alone, the discipline supports knowledge structures and likewise, the construction of CT is not an isolated endeavour. The reliance on understanding a range of factors about what constrains or enables CT is seen in the experiential influences of home, school and higher education but also the related and connected contributions of policy, curriculum, institution, discipline, history, economics and politics in a SA context. The combined forces and factors created assemblage, driven by the intercessor (lecturers in this study). Each assemblage is unique.

Chapter Eight concludes this thesis.

CHAPTER EIGHT: CONCLUDING THOUGHTS

8.0 Bringing the study to a close

This chapter constitutes the final chapter of the study.

8.1 Critical thinking among pre-service teacher education lecturers – bridging the gap

The study was motivated by an interest in the underexplored topic of CT among P-STE lecturers in SA pre-service teacher education. The critical cross-field outcome of CT is key to achieving the goals of the SA HE transformation agenda. Document analysis of key policy and curriculum documents indicated that CT is not fully explained in curriculum and policy documents and yet the responsibility is placed on the lecturer (practitioner) to interpret and implement CT.

My interest in CT arose from discussions with colleagues about the employment of CT in the HE in planning and assessment. It was often referred to as 'higher order thinking' and 'Bloom's Taxonomy'. The second point of interest arose from experiences in education in pre- and post-1994 SA education and from experiences of CT encountered in education while I worked abroad. I wondered how CT, previously not legally a feature of SA education was being negotiated in the current times.

Six lecturers from a range of disciplines in undergraduate P-STE programmes, who lectured at an independent institution for P-STE in eThekwini, South Africa, participated in the study. Their selection brought breadth and depth to understanding of how they conceived of CT and how that translated into their enactments. Furthermore, I believed that a study of the rationale for their CT conceptions would provide the depth required to understand how lecturers navigated CT in the changing P-STE environment.

A set of research questions was created to guide an empirical study:

- What are pre-service teacher education lecturers' constructions of critical thinking within the intended pre-service teacher education curriculum?
- What evidence is there of the enactment of critical thinking in the pre-service teacher education lecturers' lectures?
- Why are pre-service teacher education lecturers' (changing) constructions of critical thinking, enacted the way they are?

8.2 Summary of chapters

In the literature review (see Chapter Two) it was reported that the contribution of CT to the wider South African (SA) education transformation agenda is a revitalising factor for a previously oppressive past in terms of history, politics, economics and biography. The tracing of the transition of P-STE lecturer contexts from pre-1994 to the unified post-1994 P-STE context, in terms of the knowledge in programmes, and in relation to CT, shows that P-STE's were instrumental in furthering the agendas of a past régime. Ironically, lecturers (many of them having been educated during the pre-1994 era) are now called upon to further the agenda of democracy, and build and implement curricula that replace the obsolete apartheid curricula in HE. Despite the changes and thirty years of democracy, it was reported in various forms of literature that CT was absent and continues to be under-developed. The implementation of CT was also criticised for being inadequate for the demands of globalisation, the 4IR, and to address AI contributions and challenges. The question arose if and what changes lecturers may have experienced in the evolving eras in terms of CT.

The problem of CT failing to be effective intensified when an early document analysis of national curriculum and policy documents (see Chapter Two) stated where CT is to be implemented (against knowledge in programmes of study). Firstly, it was noted that the documents referenced only theorists from the Western university tradition (WUT). Secondly, the documents omitted to elaborate on what CT is or how it is to be taught. Furthermore, on reading more widely the scholarly engagement and debate on the phenomenon of CT related largely to schools and pedagogy. The material on CT situated in higher education globally and in SA is scarce, and little documented evidence of studies in SA P-STE which could elaborate on what practitioners (P-STE lecturers) shared about CT or its praxis, was noted. In Chapter Two, the literature review examined CT from perspectives of educational psychology and philosophy particularly that which focussed on CT in HE.

The design of the study (see Chapter Four) enabled that critical thinking could be contemplated from the mandate intentions of national document level, to the institutional level and onwards to initiation and implementation stages framed by concepts of currere and the Forcefield Model of Teacher Development (see Chapter Three).

In the data analysis chapters (Chapters Five and Six) it is established that the CT mandate appeared to reach the lecturers. The role of the institution in directing CT was seen to be present. The CT was declared in planning for pedagogy. The ontological positioning of

lecturers and the knowledge were seen to differ across disciplines, with the result that CT was seen to take many forms and understandings that emerged from observation and discussion about pedagogical moments for CT. Chapter Six reported that lecturer constructions of CT were influenced by factors attributed to the disciplines in which they were academically qualified, and by their biographies and higher education experiences (as students in their own studies and as professional lecturers).

In Chapter Seven the data themes from data analysis chapters were drawn under the theoretical lens of assemblage (Deleuze & Guattari, 2008) which told the story, not of an uncomplicated, tidy linear arrangement of CT understandings, but rather a complex set of interpretations of the lecturer CT view caught up in the theoretical structure of assemblage. This analytical framing takes account of the lecturers' and the researcher's contributions to knowing how CT is constructed and enacted, and the deeper views of why CT is constructed and enacted the way that it is.

The design of the research permitted CT to be traced from national to institution, and then to individual level of implementation. On a theoretical level, it was noted that curriculum and policy documents references theorists from the WUT, that set down thinking about the intended purpose of CT to bring about transformation in education. The currere lens of Pinar (2011) refined thinking about curriculum and CT policy intention. At a practical level, there were a variety of ways in which lecturers received the CT mandate requirements which led the lecturer to declare CT in their institutional planning documents. The means by which the intended CT was to reach lecturers was seen to be determined by the view of policymakers that the lecturers are aware of the existence of such documents, and that the institution plays a supporting role in initiating its inclusion and providing support. Despite the absence of a clearly enunciated curriculum and policy mandate, and a lack of institutional input, the CT CCFO of SA education is indeed included in planning, but the means by which it is to be achieved, differs from the envisaged straight line of communication of constructive alignment. In the absence of guidance and support, the discipline territorialises CT at theoretical and pedagogical levels. The discipline is itself challenged by experiential factors that enter the knowledge space. The constructions and enactment of CT is complex, but it is influenced and connected along relational lines that arise between concrete elements that exist in an assemblage. Assemblage conceptual devices and the framework (Deleuze & Guattari, 2008) draw together the role of each contributing force and factors that shape understandings of CT.

The assemblage construction is a gradual process of relating and connecting the findings from this study. The study resists the singular and epistemic understanding of the phenomenon of CT. It presents an assemblage of multiple evolving factual, pedagogical, experiential and contextual factors that merge and emerge and subsume each other in their creation.

8.3 Critical thinking constructions and enactments of lecturers in pre-service teacher education

This section assembles views on critical thinking.

8.3.1 A policy and implementation gap

Policy on CT states that CT is a means to achieve the transformation goals of equity, access and quality in education, for the good of the whole society that is in need of several and urgent reform. This study confirms an often-reported dearth of explication about how CT should be implemented. The prescribed knowledge types for P-STE enjoy explicit and extensive guidelines, while it is seen that there is little support beyond the institutional level signalling for CT to be incorporated into institutional documents (overtly recorded). Consequently, the lack of guidance from policy and the institution about the nature and implementation of CT indeed places a burden of responsibility on the lecturer.

Despite assumptions on the part of policymakers about lecturer qualifications, or little explanation of what CT is, in this study, the CT requirement is met by means that draw almost entirely on the understandings embedded in the discipline. The discipline unequivocally dominates the types of CT that are activated, the nomenclature for discussing CT, the knowledge that CT is to be applied to, the permissions and opportunities to think critically, as well as the depth and frequency of that critique. The expectation is that the practitioner will know what is suitable and how it will be implemented. However, this study brings into view the policymakers' expectation that the practitioner will know what CT is suitable, and how it will be implemented. The challenge of these assumptions is that the practitioner is not necessarily the holder of a professional teaching qualification. The practitioner is possibly not aware of the location of the documents that regulate HE, as some are not found in the public space or in their everyday world of practice. The study shows that the institution is instrumental in instructing that CT is implemented in planning documents such as the study letters directing the unfolding of curriculum plans. However, there is an absence of further support and development.

8.3.2 The relevance of critical thinking research in pre-service teacher education

If the practitioner is responsible for implementing CT, then the study helps to look at how academic challenges can be addressed, at the institutional level and at the individual lecturer level. This empirical study concludes that the discipline is currently the framework in which knowledge lies, presided over by the guardians/experts of the disciplinary knowledge. The discipline is also the foundation of CT, and its guardian. The power of the discipline has served knowledge and the academy for centuries. The control of CT appears to be held by individuals who make of CT what they can by constructing their own assemblage of CT, based on conceptions of CT promoted by the discipline/s, of which they are disciples.

Policy that mandates CT partially states the role CT will play in transforming education in SA, but it fails to interrogate what exists currently in terms of CT definitions, theoretical understandings, implementation processes, teaching and learning, and consolidation and audit. Policy does not take into account what lecturers know, what they think, or what they have to contribute to ensure the CCFO mandate meets its objectives. Not only is the address of policy partial and apparently ill-informed of the extent of CT theory and praxis, it also falls short in addressing the alignment of CT with issues which have emerged in education over the past three decades. This malfunctioning system is the reason that this study is one of many that is needed to contribute essential insights for policy makers, leaders of institutions and lecturers about lecturer perspectives of CT.

8.3.3 Lecturer constructions of critical thinking

This study revealed that the types of knowledge on which the CT was exercised are orchestrated at a national (macro) level (DHET, 2015) and clearly articulated at a programmatic (meso) level in institutional documents. While a great deal of attention is given to defining the knowledge types set out for programme-level inclusion in the national-level documents, CT does not enjoy the same exposition. Firstly, the lecturer critical thinking appeared to be viewed, and approached utilising (often unconsciously) the same Western university tradition (WUT) theoretical foundations, as knowledge already hegemonically conceived of in the wider higher education context in SA. Based on the publication dates of the documents, it was established that those traditions have not been revised in national curriculum and policy documents in the past two decades. Consequently, the WUT perspectives and paradigms that underpin knowledge are uncritically borrowed by the lecturers to underpin CT. In this study and this specific setting, WUT worldviews were revealed to be largely uncontested. The uncritical

borrowing was a paradoxical revelation of how CT paradigms have not been critiqued, but that the practitioner (lecturers) charged with implementing CT, nevertheless applied critique to disciplinary knowledge. They either consciously or sub-consciously were guided by the kinds of thinking understandings that were derived from the disciplines in which they held qualifications. It can be said then that in this study, WUT conceptual constructions of knowledge served conceptual conceptions of CT and vice versa. The lecturer constructions of CT were arranged in assemblages in their own right with the WUT utilised as the base for critical thinking.

The naming and forms of critical thinking that were evident in this study were almost entirely commensurate with how they were named and explained in literature dealing with CT theoretical and pedagogical views offered in the WUT. However, one could concur with Barnett (1997) and McPeck (1981) that understandings of CT are dependent on whom you ask and the purpose for which it is intended. In this study it was shown that there was no right or wrong critical thinking, only iterations and combinations, all of which, seemed to fit with critical thinking as it has been encountered in the scholarship of critical thinking. Where the forces of the FMTD suggested ways in which lecturers might conceive of knowledge and CT, it could be concluded that, regardless of the participant lecturers' multi-ethnic and linguistic biographies in this study and its unique institutional context, CT was spoken of in terms that one would associate with the WUT. When opportunities for lecturers to expand their explanation of constructions of CT arose during discussions, they explained their views on CT almost entirely in the nomenclature of the WUT and from the perspective of pedagogy but not on the theoretical views of CT. One unanticipated finding was that lecturers drew on dual disciplines (typically required in a SA undergraduate qualification), that served to inform the explanations of what CT was and how it could be enacted.

It would be fair to state that lecturers did not engage with the foundational principles on which CT is rested. Critical thinking was understood in semantic terms. Constructions and enactments of CT and its development, held by lecturers were variable in nature and in depth and frequency. Critical thinking was spoken of with limited authority by lecturers in HE, which perhaps poses a significant threat to critical thinking. It is a phenomenon which might be supposed to be understood and unambiguous for lecturers. I counter that CT is something that everyone believes they can explain, until they are asked to do so. In fairness, the articulation of CT and theoretical understanding of CT is not the final marker of whether CT is understood.

CT is also manifested in pedagogical enactments. In the absence of a clear curriculum and policy articulation of what it is, lecturers simply clung to what they know. Previously I asked, but what do they know? This is an important question given the gravitas of the burden CT and its implementers are mandated to carry.

8.3.4 Critical thinking enactments as pedagogical understandings

This question addressed how CT was enacted. The planning for critical thinking at a national level assumes that the policy mandate to initiate and implement CT is followed at institutional and individual lecturer-level. This study found that the CT initiative was communicated to lecturers at an institutional-level as a directive. Critical thinking was visibly declared in institutional documents with varying frequency. This suggests that institutions may adopt the rhetoric of CT as a form of policy compliance, declaring alignment with the lauded expectations and purposes of CT. At an institutional level, the support and direction for CT appeared to be as indistinct and meagre as that outlined in the national curriculum and policy documents for P-STE. This might be construed as a superficial nod to the mandate. This argument highlights that the enactment and implementation of CT are left primarily in the hands of the practitioners.

The pedagogy observed among lecturers revealed what CT was in practice. Additionally, the differences between how lecturers explained constructions, and claimed enactments, revealed varied multiple, fluid and divergent (sometimes contradictory) views of what constituted CT enactments. There was some blurring of the understandings of CT between what was observed in lectures and how the CT was explained, which added to the understanding that finding the vocabulary and reconciling enactments with those explanations was challenging. The task was informed by multiple elements that were understood as a practice, and as varied information and experiences encountered and gathered along the academic path that each of the lecturers had taken in their academic studies and working lives. I drew the conclusion that some influences on CT enactments were obvious and able to be placed in explanations, while others were tacit or at least more difficult to articulate. By this I mean that although CT was understood to be a feature of the P-STE programme, and there was evidence that CT was being implemented, it was not always possible to establish how that was informed or from whence it originated. That became clear in addressing the final question. It would be trite to mention that recognising the complexity of understanding lecturer CT generated many more questions about CT than could be answered within the scope of this thesis.

One outstanding finding was that the critique of knowledge in lectures was largely confined to disciplinary knowledge. The regulation of exploration and critique of knowledge in the discipline was overseen by the individual lecturer. Regulation of CT was based on how the lecturer was placed in relation to sharing knowledge, developing its breadth and extent and exercising critique over it using varied pedagogical approaches to teaching and learning of CT. It was the lecturers' prerogative to grant permissions within their pedagogical approaches to CT. None of the approaches amounted to the radical pedagogies such as that of Freire (2000). Instead, the regulated boundaries of the discipline created a safe zone in terms of what was brought under critique. The CT enactments also appeared to be confined by the lecturers' perception of the purposes that their own module would serve in the overarching P-STE curriculum, those being, for assessment, the furthering of foundational knowledge, and application to the teaching and learning of the discipline in school settings. I advance that CT was understood within confines brought about through curated curriculum and familiar praxis.

Thirdly, a significant finding in this study was the role of individual and the dual disciplinary approaches which influenced the lecturers' repertoire of CT pedagogical planning and enactments. The findings about lecturer constructions and enactments reveal assemblages of CT that are ironically self-sustaining and at the same time, in need of revitalisation at all levels of P-STE. The reliance of understandings and experiences in two disciplines presented a unique territorialisation of CT by the disciplines. The well-established concrete elements of disciplinary knowledge (pedagogical approaches and techniques) were combined at points in the assemblage of a single lecturer.

In the analysis of enactments through the means of pedagogy, I was reminded of the statement of McPeck (1981), who wrote that teachers being required to teach critical thinking should be trained to do so. The unusual situation that exists in this study context, and indeed it is the situation in many HEIs, is that not all lecturers hold professional qualifications in education. That finding prompted a close look at the policy which mandates the CCFO CT (SAQA, 2000). I noted that the policy assumes that practitioners should implement CT irrespective of their qualifications. This would ordinarily create a gap or hiatus in the implementation. This study showed that the discipline provided a complete holding environment in which a lecturer would have a complete package provided by the discipline. The disciplinary 'package' contained the content, focus, skills, approaches and techniques for teaching understandings of CT, and the vocabulary to name the forms of CT employed in the discipline. I point also, to the discovery

that it seemed to make little difference whether a lecturer held a formal qualification in education in the way that they constructed or enacted CT. Instead, the experience of teaching and learning in the HE environment seemed to contribute to how CT enactments were carried out.

8.3.5 Critical thinking as an assemblage of factors

The research demonstrates that the biographical force of home, as a social space in which to develop CT, offered opportunities to some students. The CT exposure from home, that lecturers claimed influenced their CT, did not follow any pattern that could be attributed to race, gender or language. The evidence indicated that CT might have been directed at general living circumstances and occurrences in the home environment, and according to one lecturer, at navigating life-in-general. It cannot be assumed that because there was no CT influence from home that it was not welcome. It is simply noted that it did not occur. No CT influence was attributed to the early schooling years, but in later schooling years the first relational lines between the lecturer as a learner in school, the discipline (as experienced in specific school subject choices), and CT began to be more noticeable.

The most significant CT was noted on entry to undergraduate study. The demand for CT intensified on progress through postgraduate degrees, but always embedded in the discipline and was focussed on disciplinary knowledge. The lecturers' understandings and experiences of HE could be seen duplicated in their own modules and disciplines in this study. It could be argued that this was a programmatic force, but not all of the lecturers in this study had graduated in the same programmes. Therefore, the influence of specific programmes could not be verified. It is therefore, a significant conclusion that their discipline, within the HE environment framed their understandings of CT. Thus, the relational lines between the discipline and CT can be seen as being very well-established. The discipline as a main contributor to CT constructions and enactments is made at the end of an unfolding set of findings.

This study has explored the relational lines between elements which have settled into a pattern that is constructed by the individual lecturer – their own assemblage. The relational lines in each assemblage are a web, not a linear pattern. The discipline, if allowed to do so, could appropriate the powers inherent in CT for its own purposes. At present the discipline is seen to contribute significantly to achieving the CT CCFO mandate, largely because it is a regulatory mandate to be fulfilled, but the detailed policy and institutional guidance have been absent. If

lecturers have relied on the discipline to shape their assemblage of CT, then they found in the discipline, some form of structure in doing so.

8.3.6 Critical thinking developments for new knowledge

An unexpected aspect arising out of a pedagogical perspective showed that lecturers sought more than disciplinary knowledge in their lectures. In implementing CT, lecturers reveal that enacting CT welcomes new discoveries and that CT draws to itself new dimensions of knowledge to be explored in the P-STE environment. Here I refer to the common knowledge, general knowledge and lived experience which the lecturers themselves stated were important for the lecture. It appeared that this might have enhanced the learning experience of students. A philosophical interpretation would indicate an opportunity for lecturers to gauge and garner what their students knew from their different perspectives. Possibly this was an attempt to admit more than prescribed knowledge to the lecture and to venture into new understandings of the knowledge in a shared diverse context. Read as a critical endeavour itself, it seemed a promising development. Although it was not necessarily one that would result in a critique of new knowledge or activate a quest to understand how new knowledge could be critiqued.

Admitting common knowledge, general knowledge and lived experience into the lecture space signalled strongly that the discipline can be deterritorialised as the dominant element in determining how CT is conceptualised and practised. The finding led to the realisation that the lived experience that has been deemed important in SA HE literature is present and in need of consideration in the SA P-STE CT context.

Some part of the understanding of the lecturers' constructions and enactments of CT in this study attributes ingenuity within the traditions to establish and maintain power over the academy and those in it. While the very existence of the higher education realm is regulated by law, policy and curriculum, the WUT overtly and insidiously retains powerful influence within HE. Perhaps territorialisation of CT by the discipline is a means by which CT is named, understood and practised – the understanding would be that CT is regulated and sheltered from disrupting influences by means of the discipline (for example, the very policy that masquerades as a means to encourage CT also emanates from a position to thwart CT). In other words, CT is permitted to exist, but it is not given the reign to allow it to develop the potential to overthrow the status quo of history, politics and economics. That role of implementing CT is assigned to the lecturer, at the level of the individual lecturer for the purposes of transformation. It is simple to understand that the lecturer as an individual entity is unlikely to unseat the status quo, the

individual practitioner relies on the discipline for support but also needs support and permission to venture beyond the disciplinary conventions – albeit an unspoken regulatory role that the discipline plays. The discipline is present but it is not an overt supporter of lecturer CT, instead it is a gatekeeper of conventions and traditions. That gives the impression that CT is welcome in P-STE but only to the extent that the discipline decides. It cannot be categorically established what the consequences will be of lecturers gaining greater insight and more varied means to implement CT. The degree to which CT can be developed will be influenced by the extent to which factors and elements of politics, economics, and government find it convenient and beneficial. Fully-developed CT is a goal which could theoretically be achieved in the HE space. The fact that CT seems to have remained in the reactive currere course is perplexing in a young democracy seeking redress from oppression and controlled thinking. To date, CT remains mysteriously confined.

Its full development requires a coordinated effort from all role players in education. If transformation is an educational goal, then CT is a means to slough off old thinking. It remains to be seen how a fully theorised co-ordinated CT programme for P-STE tolerates more frequent and more layered critical thinking.

8.4 Implications of the findings

Practically

This study shows that lecturers have developed practice knowledge of critical thinking which has now become tacit knowledge. Tacit knowledge is an internalised version of CT provided by the disciplines. I qualify that in the absence of a 'formal' exploration and understanding of critical thinking, lecturers have been inclined to appropriate repetitive patterns of CT. Perhaps exploring and expanding forms and understandings CT is not considered because lecturers do not think to do this as an independent academic endeavour, especially when the discipline has supported CT in the ways already discussed. The CT mandate fulfilment should not be left to chance and osmotic effects. I would advance that this research provides starting points for further exploration of CT among lecturers starting with stronger lines of connection being established between policy makers, institutions and the lecturers. Explicit information at national (macro) and institutional (meso) levels must be provided. Revising CT at the policy level and at the institutional levels would include what the lecturer thinks CT is and how it ought to be enacted. This research shows that lecturers must be involved in the development of policy for CT. The need for lecturers to willingly self-initiate and explore the critical thinking

phenomenon is crucial. Interest and will are central to this endeavour. There is the danger that debates on how CT is constructed can remain at the level of theoretical academic discussion. It is necessary to develop knowledge of the theoretical perspectives for a practitioner to engage actively in and with its tenets in practice and pedagogical decisions. Which of the many perspectives can and will be known and actioned in P-STE?

A practice implication that comes to mind is that it becomes an expectation that all lecturers are inducted into T&L of CT. My suggestion follows the notion that adult students need support in learning (Kegan, 1994; McPeck, 1981), why not also the lecturers? It is a fine suggestion, were it so simple! I would state that there needs to be audit of the current understanding of CT . The lecturers would need to establish who is qualified to design and lead such an audit. Where skills are in need of development, it would be necessary to set aside time for engagement in the busy-ness of the academy. Aside from the logistical constraints of time and resources to engage meaningfully in the development of CT, the institution would need to be ready for the consequences of CT that it promotes.

Methodological considerations

The case study for this research was created in a single, independent P-STE institution, using six participants for the initial research. The six participant inputs were rendered to four as it became apparent that the data overlapped in some respects. The limitations of these findings and interpretations refer to this single institution. Other higher education institutions offering P-STE in SA, are public universities. The multi-disciplinary, public university environment is not replicated in a smaller, independent institution. The independent institutions for P-STE are usually self-funded, the lecturing staff contingent is smaller and there is less attention to research because the funding is limited. Those factors might impact the level of qualification and availability of academic lecturers available for participation in such a study. Within the single case study context, lecturers who were once ‘trained' in teacher training colleges, perhaps focus on ‘training’ as has been suggested previously, as opposed to being exposed to theory-driven praxis attributed to universities in teacher training of the past. It is not clear whether CT may have suffered from little attention in these circumstances, as opposed to more research and theory-driven university settings.

The CT observed and discussed in interviews with lecturers, was enacted against knowledge of the discipline, and in accordance with aims and objectives of curriculum that lecturers elected to develop when they designed modules. It can be anticipated that previous lectures

could have affected CT enactments and interpretations beyond the confines of the observed and discussed lectures selected for this study.

It comes to the fore in the methodological design of this study that while documents are read and explanations are heard, observation confirms and contradicts claims and thus provides a more complete understanding of each assemblage of CT. Observation revealed many perspectives of CT claims; the atmosphere in the room, who activated and/ engaged in the critical thinking (lecturers or students) and who was passive, who was able to engage the students and how they did that. I am not the first researcher to employ observation, so I have given particular attention to an approach that heightened my awareness of how distorted observation can be. I could also not claim to capture all that lecturers would have shared about CT, had there been more time for observation and discussion. Assemblage points out the transitional nature of persona, abstract machine and concrete elements which helps to recognise that this research is a snapshot of what CT was understood in a specific timeframe. In the meanwhile, the dynamics of assemblage continues deeply complicated infinite interactions and connections.

Use of thematic analysis was intended to maintain an open-ended path for interpretation - an opportunity for emergent and multiple possibilities is enhanced. The level of abstraction required in interpretation possesses the inherent danger of misinterpreting or misrepresenting items in the data; a challenge for academic endeavour which I took seriously. Maclure (2013) rejects the idea that findings must be conclusive as can occur in data interpretations arising from coding. The dendritic results of coding are detrimental to her anticipation of plurality in views of data in empirical studies. This ties directly to the irony of assemblages which lies in the step-by-step general logic which it employs. More precisely in the territorial assemblage, the deterritoralisation (stoppages) has a regulating effect that has been beneficial in multiple ways in this study. The first is the effect it has had on understanding lecturer constructions of exploring critical thinking with its changes and iterations over time. Secondly, in pausing to identify how lecturer assemblages of CT have adjusted (relational lines may have been opened or they may have altered greatly or slightly) over time, including the present. Thirdly, they have regulated the advance of constructing an assemblage of CT in this study by identifying stoppages (in thought) along the relational lines of assemblage at the national, institutional and individual lecturer level. The stoppage as a component of territorial assemblages is that they are necessary to permit space and pause to engage in critical thought about critical thinking.

The pause and progress suggest an opportunity to engage in quality thought about CT for the researcher and the reader.

I cannot claim my findings to be applicable outside of the single-site in which research was conducted. However, the methodological design may be replicable.

Policy

In reference to the creation of national documents, regulations and curriculum policy related to P-STE programmes, it might be anticipated that South Africans would move away from the thinking of the past, as circumstances have permitted, in a democratic setting. The rate and extent to which this occurs has implications for lecturers and students alike, but, has the knowledge in P-STE kept pace with the rate of change so that it serves the intended transformational change? I suggest that the rate of sloughing off old thinking has been slow. The knowledge in P-STE has been under the curatorship of one or possibly dual disciplines. The CT effected against that knowledge has, at best, involved the maintenance of the status quo under the curatorship of the discipline.

The SA HE imperative for transformation in HE envisaged new ways of critiquing itself by means of CT. Simply thinking that CT should employ perspectives of the existing P-STE curriculum with an expectation that the outcome would be different appears to have been misplaced. The directive on who is responsible for CT has been established (See Appendix B (i)). What does that demand from the lecturer in terms of their constructions and enactments (assemblages) of CT and where does the preparation for the task lie? This study was conducted by a P-STE lecturer, asking P-STE lecturers for their insights, interest and consideration of CT because CT is directly in their hands. There is trust and anticipation at a national level that the individual will achieve the mandates. CT cannot be marginalised or ignored.

8.5 Recommendations

This study advocates for pursuits of critical thinking that are a deliberate departure from critical thinking as it is constructed at present.

Policy

It cannot be determined whether the current curriculum and policy documents that mandate CT in P-STE, are set out with ‘sinister’ intent. They record the WUT foundational principles in current written form, and can therefore be criticised for perpetuating the WUT. Contentions in

knowledge foundations in SA are theoretical and conceptual as expressed in decolonisation, decoloniality, transformation, globalisation, 4IR and AI debates, none of which are reflected in the documents. Instead, as Pinar (2016) indicated, the curriculum intentions are unclear and underdeveloped but hold the potential to offer greater guidance if they were themselves revised. Pinar (2016) has stated that there have been missed opportunities for the post-1994 curriculum and CT to be improved. This study advances that there is an opportunity for the alterations and new considerations to be effected. Documents that will direct change through critical thinking must define CT, and suggest ways in which it is to be directed to the overall goals of education in SA. CT that is meant to be an honourable and noble phenomenon, is yet to be named and explained. Presently, the policies and curriculum documents mandate that the lecturer should lead on CT, and go in search of its meaning themselves.

Documents that stipulate curriculum and programme, compliance and mandates (such as the CCFO CT) must be made available to all lecturers through a specific channel that ensures that P-STE lecturers and other HE role players can access them. At an institutional level, the direction for implementing mandated outcomes must be clear – a matter of induction to HE teaching and learning and administration. Such must deliberately be brought to the lecturers' attention. This study has revealed some lecturer uncertainty about what direction to take with CT. The accompanying institutional policy for CT teaching, learning and assessment needs to be developed. Departments or disciplines require internal policy to record the decisions and vision for critical thinking. The policy should be lodged with quality assurance and teaching and learning units as working documents. The development of online resources in a way to develop an awareness of CT for the discipline would be helpful to existing and new lecturers. Contrary to all that has been discovered in this study about the power that discipline wields, it would be best to initiate plans of action at departmental discipline level, because gathering large groups of academics in one place for discussion is very challenging due to the little time that lecturers name as a constraint on CT. The establishment of online interaction for the development of CT in disciplines is an option, however, asynchronous work can often negate the intention to collaborate because not all academics are online at the same time. One must pay attention to dissident voices, and encourage and value 'otherness', which is difficult to do in an asynchronous environment. The development of diverse theoretical underpinnings for CT must be a central consideration for all policy decisions. The CT bases and foundations need to be interrogated by the lecturers themselves, given the responsibility and mandate that they are given for the CT initiation and implementation. This study shows that there is a need to develop

meaningful internalised understandings of CT, at the personal and professional levels, which the forces of the FMTD and assemblage lenses have shaped to be understood as integrated understandings and experiences over time and space.

Context

The lecturers' success at identifying their own epistemology of knowledge, the way in which they exercise critical thinking on that knowledge, and the sensitivity and growth in theorising CT, and then translating their understandings to pedagogical situations is a linear way of expressing what could be developed in relation to CT. In SA, in as much as transformation is aspired to, what has been reported in this study points towards critical thinking being buried in the psyche of the nation. I hasten to add, as Mahabeer (2020) does, that it is difficult to recognise in oneself the contribution to the continuation of the status quo. The implication of this realisation is that there are places we do not recognise in ourselves after decades of ideological brainwashing and its aftermath. Presently, the WUT provides the foundation of academic learning, and the discipline is built upon that. I would then wonder how immediate of a concern it would be for lecturers to introspect on the matter of the foundational principles of CT. It is almost twenty years since the publication of the policies that mandate the CT CCFO.

As a result of this study, it is understood that enactments of CT are not confined to pedagogy; instead, it is a way of being. It is a combination of multiple actions. These include being professionally and responsibly aware of the requirements for CT. CT must be consciously embedded in meaningful planning of lectures through the use of institutional documents. CT then needs to be executed in theory-driven, informed means in pedagogy using appropriate pedagogical approaches. The matter has been given little deliberate attention at a national level and therefore, lecturers take their cue from institutional instruction to implement CT in planning documents.

It will take tremendous will and courage to delve into critical thinking in conscious ways. Those ways serve to challenge individuals and disciplines to uncover what it means to be more broadly inclusive of new ways of thinking about thinking and of otherness. In the context of this research, it is clear that in attempting to interrogate critical thinking, and to call for more supportive elements and structures to contribute to the development of the phenomenon, can present advantage, and also the possibility of over-direction, when that which is needed is a balance of inputs from elements in the assemblage of CT.

However, it is also necessary to consider the multiple consequences of CT in the broadest sense across disciplines, institutions, in life experiences, economics and politics. It is an advantage and a danger to establish open-endedness; surely the raison d'être of critical thinking! With greater articulation at the level of policy and curriculum, the mandate to think critically cannot and will not be exclusively applied to disciplines. Furthermore, lecturers would need to be prepared and equipped for dealing with the consequences that heightened consciousness about critical thinking can bring. The institutions, and political and economic elements would need to be careful what they wish for (mandate) because it is not possible to control that to which lecturers and students will ultimately apply critical thinking..

8.6 New ways of thinking about critical thinking

If critical thinking is to reach the full status assigned to it as a central endeavour of higher education, it must do what is intended. When older theoretical frameworks and teaching and learning approaches are altered in higher education, for example, in accordance with the calls for transformation of the HE space across Southern Africa, the changes must be deliberate and overt. If there is a call to pursue transformation, and lecturers are tasked with that responsibility, it is not enough to assume it will alter without coordination and encouragement. Challenge, personal courage, personal wealth and personal change in business, commerce, communities, policies and practice are crucial in achieving goals and seeking advances outside of academics. That combination should be fit for developing critical thinking in different ways. The difficulty with such thinking is that the academy is not the real world; instead, it is often confined to handling knowledge for purposes pre-determined and expected to translate to the requirements of politics and economics with relatively little engagement with those entities. Therefore, in that disconnect, the academy may be a poor fit for developing critical thinking.

The central concepts of this study are an amalgamation of concepts arising from a coalesced lens. The framework of this study has emerged from literature that arises largely from SA sources – they are contextually relevant (Pinar, 2016; Samuel, 2008 and Wallin, 2010). The literature that provides theoretical and praxis understandings of what CT is and how it has evolved is viewed entirely from a WUT tradition even in an evolving SA context. Might this be construed as standing aloof from current debates in higher education and neglecting the mandate for exercising critical thinking? I would offer rather that the marginalisation and neglect of interrogation of knowledge and critique thereof, would result in CT being perpetuated in ways already understood (reactive currere). Challenges of the current P-STE context and CT should be sought in theoretical traditions and academies of the wider African

context, from the Middle and Near East and from regions of the Global South. They would add new dimensions to the study. Employing views from a wider diversity base would honour diversity in the interpretation of constructions and enactments of CT. While it might be considered that this study would have benefitted from the introduction of a lens that has been used previously to conceptualise different aspects of CT, it must be remembered that the aim of this study was to consider the lecturer's constructions of CT. A coalesced lens has allowed lecturers' constructions of CT to be assembled in different ways. Thus, developing insights into CT from new perspectives would necessitate the selection of participants for the study, who would be able to speak to the new perspectives. Where would the participants be found? At present, the participants have been seen to adhere to the WUT which creates some challenges for discovering more about CT constructions in this study.

8.6.1 New insights of lecturer critical thinking

The step-by-step analytical approach (provided by the territorial assemblage), constructions and enactments of CT at a range of levels, have been offered. Findings among lecturers, point to a range of expected points that concur with findings of researchers about critical thinking in other contexts.

This study sought to look at the lecturers' constructions and enactments of CT. The evidence points out that the influence of historical/political, biographical, programmatic forces (concrete elements) are significantly influential; they are etched on the psyche of lecturers who have arranged their understandings of CT according to those influences. It has been shown that lecturers found the introductions to CT in a variety of contexts, informed by various influential persons at different stages of life particularly in formal HE. There was no evidence to suggest that there were links to the above that could be attributed to the age, gender, language or ethnicity of the lecturer. Instead, in the timeline of transition of their assemblages, they have clung to the familiar discipline. The naming, planning and enactment of CT is driven by the discipline or dual disciplines in some instances. CT has been applied safely to disciplinary knowledge, in a time-honoured tradition of the WUT. The legitimacy of the knowledge has been contested and challenged by decolonisation and Africanisation debates, by political and economic agendas that attempt to respond to a confusing array of demands for globalisation and 4IR-ready P-STE graduates. However, in this study, the attention to those challenges among lecturers has been minimal.

The discipline has been the source of understanding and praxis. This study synthesises diverse theories and perspectives on CT and its current context in P-STE to broaden the discourse on CT among lecturers. It provides a starting point from which readers and lecturers can begin to interrogate their views on what CT is beyond unchallenged terminology and signifiers. Planning for CT can be approached as an academic endeavour through exploration of theoretical perspectives that interrogate wider meanings and practices not of the WUT, in a deliberate and conscious way. On many levels, a lecturer initiates scholarly study of CT to challenge the hegemony of the discipline to move towards transformation.

The policy and curriculum documents that regulate higher education in South Africa are in need of renewed focus so that they can meet the crucial education transformation agenda. In this study, it has been argued that the epistemic foundations in policy and curriculum documents are insufficiently critiqued for suitability in an evolving landscape of P-STE. The critique of epistemic foundations marks a beginning of the shift from reliance on the perspective of the WUT, a currently pervasive interpretation of knowledge, to more equitable representational perspectives.

It seems that lecturers are willing to admit different kinds of knowledge to their constructions and enactments of CT, those being disciplinary knowledge, common and general knowledge and to some extent, the knowledge which they bring to their work in academics by means of biographical and programmatic influences from home, community, and higher education. It was noted that there was a similarity in lecturers' views that CT can be applicable to knowledge inside and outside of the academy although it was not clearly established how the disciplinary knowledge, and its accompanying critique, was to be applied outside of the academy. Not only is it a limitation but it confounds understanding of what knowledge is. It is not known what CT will be applied to that knowledge. Although it is unclear what knowledge is welcome in lectures and what CT will be applied, the mention signals the promise of change.

The exertion of the discipline as the guiding framework and, at the same time, the delimiting boundary-maker against which CT is enacted, dominates the CT constructions and enactments that are seen in this study. The idea that knowledge other than disciplinary knowledge is admitted to the academy represents a stoppage. At the stoppage, a truncation is encountered in the CT assemblage of each lecturer. The choice is to remain in the tracks of currere or to include wider considerations of what CT might be enacted against.

If CT is the elixir of HE transformation, which it is expected to be, there must be alterations to the concrete elements of policy, curriculum and CT for lecturers; not in a fixed and prescribed manner, but in an open-dialogue, and critique that befits CT, so that individuals constructing and enacting CT can experience understanding. While the mandate places the responsibility for CT in the hands of lecturers in P-STE, this study has shown that they are pursuing the mandate, in the ways that they know how. The challenges for the CCFO CT mandate presently are its intentions, implementation, definitions, and consequences, all of which are in need of considerable attention. The CCFO CT mandate is not an outdated principle; conversely, it is vital to address so many older and more recent challenges for knowledge in P-STE.

8.7 Limitations

Theoretically

> Since the abstract machine is not an eternal essence or a program given in advance of the concrete elements, when the concrete elements change so does the set of relations in which they are in.
>
> The answer, can only be resolved step by step (Deleuze & Guattari, 1994, p. 39)

Assemblage is helpful in this study in specific ways because it permits an unfolding of possibilities of that which can occur between the position of the lecturer, concrete elements and their presence and arrangement in the abstract machine (thinking and connections along relational lines). However, I acknowledge that assemblage alone cannot frame the study, thus the coalesced lens of currere, and the forces of the FMTD have been used. Despite, the multiple views that lend structure to the study, the final coalesced lens constitutes a specific perspective of critical thinking among P-STE lecturers.

Ontologically

The study is indicative of how CT is read from the perspectives of the Western University tradition, the perspective of all my own learning. This study did not include theory from other philosophical considerations and publications for CT as deeply as it might have done. It was not the intention to do so in the confines of this thesis. This study suggests that there is a need for such considerations. I found it perplexing, that regardless of the biographies of the lecturers in this study, their assemblages of CT were arranged within the boundaries of the discipline and nomenclature premised on theoretical foundations which honour the WUT. If I had selected different modules, for example, any of the 12 official South African languages (poetry

and prose aspects in home languages), I wondered how the relational lines in CT assemblages of lecturers might be arranged.

Methodologically
On account of critical thinking being philosophical and cognitive endeavours, I acknowledge that CT enactments are difficult to detect on account of them being invisible. Interpretations from document analysis, observation, and the interview data provide a range of sources to add robustness, confirmation and reliability for theorising about the conceptual shifts that arise from this research.

During the study, I was unable to engage with lecturers after the observations and interviews had been concluded. The timeframe for further endeavours was highly restricted, and as a result, I as the researcher, needed to interpret the data largely alone without further input. It would have been beneficial to continue the conversations we had started. In previous studies my preferred approach was open and collaborative; in this study I became increasingly busy with a new role and I subsequently left the institution. This situation has impacted the depth of interpretation I could engage and it was a long and frustrating path which resulted from navigating new paths during the writing of this thesis.

8.8 Future research

Firstly, the contentions of current foundational principles for knowledge and CT (a force at work which has locked understanding about CT into a tradition, overseen by a hegemonic master) must be liberated for a more honest and validated view. Voracious new masters, both legitimate and possibly illegitimate (global economics, Artificial Intelligence, the Fourth Industrial Revolution and decolonisation) arise. They demand the attention of CT and interpretations of what it is; all supposedly to be interpreted by the 'practitioner'. Critical thinking is officially the burden of the practitioner, but it is clear that the response to the mandate is activated by the practitioner according to the discipline and piecemeal arrangements that make up an assemblage. A move towards a communal and coordinated effort is highlighted for CT to be clearly articulated and explored more deeply as a theoretical and pedagogical endeavour. The section below provides a view of the understandings gained from conducting this study.
I have broached the appropriateness and legitimacy of the current theoretical framework for CT. What is the alternative to the framework of the WUT? Higher education thrives on

theoretical frameworks. There must be a variety of philosophical and practice views that arise from the Southern African perspectives that can help to explore how CT can be conceptualised and practiced in a way that promotes transformation. While this suggestion is not entirely new, it is urgent, and efforts to pursue this line of enquiry need to be intensified. Who will do this in P-STE? Who will air existing alternative theory and name new theory to underpin critique given the diversity of the populus?

In the current stream of cognition of CT, lecturers must focus on the mandating documents and their theoretical underpinnings in a scholarly way. The documents need to be acknowledged for what they are and interrogated for the shortcomings they display. A starting point is to seek the revision of the curriculum and policy documentation, which currently state what must be achieved, but not how it is to be achieved. If it is left in the hands of lecturers to do this, then what are lecturers' understandings of the CT? It is arguably difficult to look at the theoretical underpinnings of CT from perspectives other than those of the Western university tradition when that is the foundation of the learning throughout an educational journey. It does not imply that lecturers have not explored other perspectives; it is an academic duty to do so. However, future research would look at establishing reviews of existing literature and seeking the works that are diverse and representative of the people.

In the South African context, there is hope. CT is influenced by epistemology, pedagogical concepts and ontological underpinnings among a plethora of forces of all things South African, a unique and engineered milieu in which to think (Adams, 2011). It is best addressed by South Africans. The pursuit of research in the area of CT in P-STE is yet to receive the attention it demands, given the far-reaching influence of teacher education across the schooling sector.

I can offer little within the scope of this study about how CT can address Africanised, decolonised, global, AI-generated and possibly deep or fake knowledge. That, too, is an area for future exploration because new views about CT is conceived of at a national level, will find their way into education. First of all, therefore, they need to find their way into P-STE without delay. It is worth addressing them all in one sweep because CT is constrained and its freedom lies in developing more deliberate metacognitive states at all levels of education, not in the hands of practitioners alone.

8.9 Concluding thoughts

The discipline has been doing the work of informing CT. The discipline itself must, however, then become subject to conscious scrutiny about the conceptions and enactments of CT, and about the concrete elements of knowledge over which it holds guardianship. Currere theory offers that its negative and reactive force of currere is responsible for the disciplinary knowledge on which CT is exercised. It is not enough that the CT is promoted only from the perspectives that it has occupied for so long. The long-held perspectives are those of the WUT, which are seldom challenged, according to the findings of this study. It is not enough that the lecturer is satisfied or allowed to be satisfied with long-established assemblages. CT necessitates the deterritorialisation of the knowledge epistemology itself. CT is a tool with which to shift the ontological relationship at the lecturer level, and the means to critique cannot simply be reduced to a blind transference of knowledge with its 'safe CT' activations in the hope that a different result (transformation) will be achieved. The activation (lines of flight) in the CT assemblage must prompt the lecturer into a metacognitive state (a form of deterritorialisation) that advances the interrogation of the theoretical foundations of the discipline, the critique of knowledge within the discipline, and the very foundations on which the critique is premised.

In the image of CT construction and enactment of CT as an assemblage sees the lecturer in the assemblage and of the assemblage, able to arrange the concrete elements as they see fit to do. They can see their own relational lines, but there is also a restricted view which prevents them from seeing the complexity and into and around the elements. Some of their view is obscured. Thus, each time they rearrange elements within the assemblage, or they adjust their position within the assemblage, even slightly, there are new components of the CT assemblage brought into view. In this study, it has been possible to intentionally step back to view as much as the study design permits, to see new views of how CT is constructed. However, as the researcher viewing assemblages, I, too, am not able to view all of the assemblages. This study represents the assemblages at a specific moment in time. The CT constructions and enactments of lecturers and their rationale for their views assembled in this study are invaluable for building new assemblages to inform CT in P-STE. This will require a co-ordinated effort at national, institutional and individual levels so that the assemblages are viewed in an integrated manner based on what everyone involved in activating the CCFO CT can see.

The study explores the policy and curriculum requirements for the CT mandate that is a critical cross-field outcome of South African education. It is established by means of theoretical lens of the conceptual elements of reactive currere (Wallin, 2011), that the theoretical concepts and principles of the Western university tradition are foundational to knowledge in the curriculum and to the CT that is to be understood and enacted on the knowledge. Furthermore, the study examines a vision of what CT could achieve - embodied in the theoretical views of the concept of active currere (Wallin, 2010). This study adopts the antithetical lenses to demonstrate what is presently the position of knowledge and CT and how they might be different.

A range of theorists of theory and praxis of CT lend perspectives to the understanding of how CT is conceptualised and developed, and how it is practised in multiple contexts abroad to form the basis on which to establish how lecturers in this study conceptualise and practise CT. The postmodernist, ecological systems model that is the Forcefield Model of Teacher Education (Samuel, 2008) interlaces the conceptual understandings drawn from Pinar's (2011) reactive currere to interpret what factors intersect the CT endeavours of pre-service teacher education lecturers in historical, political, institutional and biographical senses.

The study shows that CT is not articulated clearly, and the means and understanding to implement it is not provided. A mandate handed from national (macro level) directly to the individual lecturer, through institutional (meso level) policy documentation, reveals a lack of alignment of support and clarity between curriculum and policy intentions and implementation. The support for lecturers is largely rhetorical from national and institutional levels. In this study the discipline within which the lecturers operate provide the yardstick for CT in powerful and unanticipated ways, setting the parameters for patterns for lecturer constructions and enactments of CT. These patterns are complex and uniquely South African. Moreover, they are explained as assemblages informed by unique histories, broader politics and economics, as well as the personal higher education experiences of the lecturers as students and as lecturers in particular disciplines. The assemblage is never static, not complete, but which alter at each moment that CT is considered and enacted. As assemblages, conceptions and enactments of CT are by nature, subject to change or alteration it is seen that the informants of CT are varied but contingent on a variety of factors. Whilst lecturers may know that CT is required at policy and political rhetorical level, the policy does not set out clearly what is CT is or how it is to be taught or learned. The implementation of CT would be a largely unguided endeavour at institutional level were it not for the influence of the disciplines in which they are educated.

The most significant influences are those demonstrated in the discipline and therefore also the institutions of higher learning where lecturers themselves studied in the disciplines of their degrees. This study indicates that the legacies of past experiences within education are the greatest informants of the CT and that is particularly within the Western university conventions. The enactments of CT explored in this study direct attention to the way in which knowledge is viewed has a direct effect on teaching and learning of CT - being experts of knowledge and granting permissions or opportunities for CT is revealed as relevant to the type and extent of CT.

It is seen that lecturers know what CT is in terms of the names given to types of CT. They declare it in institutional documents and they are able to discuss enactments of CT. This study concludes that the lecturers are charged with the task of implementation and do so with what they know. The need is for wider understanding of the knowledge foundations for CT and for support and structure to advance the mandate to reach the intended goals of the transformation agenda in education as set down in the Education White Paper 3 (DOE, 1995). This thesis argues that the mandate for CT is a reaction to the imperative need for CT and that it is being implemented in the ways that lecturers know how to do so. The lecturer thinking and practice explored in this study, points to a need for CT to be set down and understood in more deliberate and organised ways - this would be thinking about critical thinking to be exercised on consciously constructed knowledge that is valid and appropriate for the South African context. It advocates for the use of forms of critique where foundational principles of that critique are relevant in the South African setting thus moving towards knowledge and critique that is legitimate and that serves the transformational agenda in truly transformational ways.

The responsibility for such structure is for national level policy to be more intentional in how CT is named and explained. It is also necessary for the institutional level implementation structures to effectively disseminate information in a structured programme where parameters for a significant and weighty mandate of education (such as the CCFO CT) is made explicit. The role of the institution as gatekeeper of national curriculum and policy implementation would be ideally contribute to the coordinated effort that would extend beyond the directive to lecturers to implement CT but also to trace effectiveness through audit and development. It is also necessary for the disciplinary level policy to be devised and documented. Indeed, just as the lecturers are charged with the responsibility to implement CT, it is necessary for them to amalgamate their namings, enactments and links to the discipline and across disciplines for

analysis, discussion and documentation. The amalgamations of this expertise that currently resides in the discipline is in need of expansion, recording, demonstration, critique, articulation and documentation.

This thesis has addressed critical gaps in the understanding of how lecturers in South African pre-service teacher education conceptualise and enact critical thinking (CT) within the mandates of policy and curriculum. Although CT is positioned as a critical cross-field outcome in the national educational project, relational lines be between policy intentions and expectations fail to provide clear definitions or explicit pedagogical frameworks. Institutional belief about what lecturer knowledge of and for CT and its implementation misses certainty and adopts assumption.

The relational lines of communication about the mandate from national through institutional levels to individual lecturers result in implementation that is largely unguided except for the influence of disciplinary traditions. Thorough analysis of policy and curriculum documents confirms that the disciplines are grounded in Western university conventions. They play a central role in shaping both the conception and practice of CT—legacies rooted in lecturers' own educational and institutional experiences and histories. The use of reactive and active currere as contrasting lenses, in conjunction with the Forcefield Model of Teacher Education, has provided a unique theoretical positioning to explore how biographical, historico-political, programmatic and institutional factors intersect and flow in the lecturer CT endeavour and in the knowledge realms in which lecturers exist as academics charged with the responsibility of CT.

A distinct contribution of this research lies in its probing of the knowledge foundations upon which CT is exercised, an aspect not specifically addressed in international scholarship especially that arising from contexts girded by the WUT; and only infrequently broached in South African P-STE. While much existing literature addresses CT in school contexts or from abstract philosophical positions, this study confirms that the lecturer understanding of CT draws on scholarship stated above, it also highlights the significance of intersecting factors of the lived realities of lecturers who themselves must interpret, define, and enact CT for future teachers. It shows that lecturer practices are assemblages—fluid, contingent, and continually reshaped by policy rhetoric but presently, mostly by disciplinary boundaries and personal histories.

This thesis foregrounds the tension between dominant Western epistemologies, with their individualist orientations, and African communalist perspectives, raising important questions about the legitimacy, relevance, and transformative impact of CT in its current framing. By revealing these tensions and documenting the ways lecturers navigate them, the study provides an empirically grounded foundation for rethinking how CT is defined, supported, and enacted in ways that are both contextually valid and aligned with the transformation agenda set out in existing policy in SA P-STE.

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Many references in the list above were accessed at a variety of institutions to which I have had access since 2018. They were accessed prior to electronic versions being made available. This is the reason that the DOI or URL have not been provided in some instances.

APPENDICES

Appendix A – Knowledge Types in Pre-Service Teacher Education

Current knowledge types as intended in the national policy document for pre-service teacher education

National curriculum policy directives guide the programme design for pre-service teachers' education. A key directive of curriculum design knowledge is the national policy document titled, *Revised Minimum Requirements for Teacher Education* (Department of Higher Education and Training (DHET), 2015). The directive defines 'knowledge types' (DHET, 2015, p. 13).

National policy and curriculum documents direct and define the forms of knowledge to be covered by institutions offering pre-service teacher education. The documents have been part of the process of restructuring the curriculum and policy in pre-service teacher education (P-STE) in South Africa for the past 27 years. The National Education Policy Act (1996) and, a key directive of curriculum design knowledge is the national policy document titled; Minimum Requirements for Teacher Education Qualifications (DHET, 2015) have a twofold purpose: i) they assist in identifying knowledge value – past, present and future and thus indicate the knowledge platform on which lecturers must work in the forms of knowledge types (DHET, 2015, p. 12-13). These knowledge types are not intended to be discrete: permeability is recognised as serving individual modules and overall programme purposes. ii) they are the same documents that mandate the critical cross-field outcome – critical thinking.

> The principle of applied and integrated knowledge implies that the different kinds of learning described above should be integrated across courses and modules, so as to ensure that they serve the purpose of the overall programme.
>
> (DHET, 2015, p. 13)

The purpose of including the knowledge types as an appendix serves to inform the reader of the types of knowledge that the lecturer is charged with developing, and therefore also the critical thinking that will be activated against.

Five knowledge types within the Revised Minimum Requirements for Teacher Education Qualification (MRTEQ) (DHET, 2015) policy

The broad knowledge types directed by national curriculum policy are defined and given as examples are as described hereunder.

i. *disciplinary.* subject matter – philosophy, psychology, politics, economics, sociology history of education and the academic disciplines underpinning teaching subjects. It is here that ethics and issues related to knowledge are encountered by the pre-service teacher in the lecturing situation. Knowledge and relationships between self and others are cross-cutting themes in this area of teaching and learning (DHET, 2015, p. 12).
ii. *pedagogical learning* - pedagogical general knowledge – study of principles, practices and methods of teaching; specialised pedagogical content requiring the lecturer to teach pre-service teachers to create learning opportunities and assessments for diverse learners, to using concepts, methods and rules of a specific discipline (DHET, 2015, p. 12).
iii. *practical* - learning from and in practice – the study of practice, using resources to analyse practices across a variety of contexts, drawing from case studies, video records, lesson observations to theorise practice and provide a foundation for authentic and simulated learning in practice. Work-integrated learning (WIL) is situated in the workplace; it is vital for the development of tacit knowledge. The guides for this are the mentor lecturer and classroom teacher who encourage lesson planning, implementation, observation and reflection (DHET, 2015, p. 12).
iv. *fundamental.* learning of second language at a communicative level, competent use of Information and Communications Technology (ICT) for personal work to deliver innovative teaching and learning and academic literacy skill development for success in the higher education context (DHET, 2015, p. 13).
v. *situational* - knowledge about varied educational learning situations, contexts and environments of education (stakeholder awareness and incorporation), awareness of policy, political and organisational contexts. The other forms of knowledge occur in different contexts but situational learning is knowledge about contexts. For example, complex post-apartheid South African society, confronting diverse challenges faced by children, and the communities in which education is situated (DHET, 2015, p. 13).

The reasons I have included Knowledge types, i – v above are to:

- illustrate that there is a specific list and explanation of the types of knowledge but no mention of the content itself; a point noted by Sayed and Novelli (as cited in Sayed, Motala & Hoffman, 2017, p. 82), and to
- demonstrate that unless P-STE lecturers actively engage with the national documents, they may neither be aware of the knowledge types nor are they critically aware of the knowledge content or necessarily its creation and furthermore, the theoretical underpinnings of the such knowledge may not be obvious to someone steeped in the WUT.

Appendix B (i) – Document Analysis Grid – Details of Publication 1

Details of Publication 1
South African Qualifications Authority (2000) *The National Qualifications Framework and Curriculum Development*
Note/s and Quote/s
The introduction to this document provides a rationale for education by referring to the classics and then finally to the behaviourist with a range of educational philosophers mentioned in between. It is suggested that outcome-based education, the NQF, quality assurance and a social conscience will provide a framework for the curriculum development and delivery. "In fact, the NQF is not about how learning is facilitated in the classroom and none of the NQF processes focus on learning programme development and delivery." (2000, p. 7) The setting of a curriculum must be suited to the social milieu in which it is situated (2000, p. 8). The author acknowledges too that the route to a qualification may be achieved in many different ways and likewise different experiences will impact on the achievement of the learning outcomes (2000, p. 9). The multiple routes and experiences to achieving a qualification will span many disciplines and must extend to all areas of learning. The document defines 'standard', 'unit standard', 'learning programme/course' and 'curriculum', 'outcomes-based education' and in incidental senses the words 'critical' and 'critically'. 'Critical' is not defined deliberately. In more than one instance the document states that the: providers are responsible for how content is taught, "how outcomes are achieved, how to encourage the development of identified skills and in some cases, choosing the content that best suits the process." (2000, p. 9) "Outcomes-based education is about systemic change." (Spady cited in SAQA, 2000, p. 11). The levels which exist within the curriculum are those that official, espoused and enacted (2000, p. 12). The characteristics of outcome-based education is listed by Spady 1994. (2000, p. 11). The author has noted that all levels of the South African education context inherited "substantial deep-rooted" and "widespread" problems at a systemic level in all levels and that teaching practice and student learning have been negatively impacted and that systemic change would address both the latter (2000, p. 12).

Jonathan Jansen states that outcomes-based education cannot be deemed a failure when the basic requirements e.g. teacher training, support material has not been provided or distributed (2000, p. 13).

The NQF is an indicator of what learning programmes should aim to achieve in order to reach the standards and qualifications (2000, p. 13).

The document defines the kinds of knowledge that the education system recognises and aspires to, they are:

Mode 1 – knowledge is homogenous, discipline related, hierarchically structured and coded according to the canonical rules of specific disciplines. It is transmitted from expert to novice.

Mode 2 – "non-hierarchical knowledge, inter- or trans-disciplinary, fast changing, contextualised and socially responsive." (Gibbons et al. p. 17 cited in SAQA, 2000, p. 17)

A point in the SAQA (2000) document which is highly significant in this research is; "Since the qualifications and standards focus on the learning outcomes, the methodology of how critical outcomes will be developed within content, is in the hands of the practitioners." (2000, p. 20) followed by; "The level descriptor debate is hence associated with critical cross-field education and training outcomes, their definition and testing their value in a decontextualized situation." (2000, p. 20) which outlines the debate about how the level descriptors can be relevant in all fields.

SAQA does not prescribe how processes nor how particular outcomes must be achieved and nor does it prescribe how assessment is to be conducted (2000, p. 21). SAQA does not militate on the assessment of the outcomes either. (2000, p. 21) If both the teaching and learning and assessment of critical outcomes "is left in the hands of the practitioners", these most elusive elements remain elusive or it would be best if they were clearly understood by the practitioners.

In this document the root word 'critical' appears in the following forms:

critical	Varied forms of the root word 'critic'	Context in which they are expressed in the document
in the index	critical cross-field outcome	
p. 5	critical inquiry	What learners should ideally develop
p. 11; 14; 20	critical cross-field education and training outcomes	

p. 18; 20	critical outcomes	
p. 17	critical thought	Necessary to avoid behaviourist thinking
p. 17	critical self-evaluation	
p. 18	reflect on their learning experiences critically	Speaking of learners developing this outcome
p. 18; 28	critically evaluate	And also analyse and organise in relation to information
p. 18; 19	use science and technology effectively and critically	In relation to attitudes to the environment and health of others and to understand the world as a set of related systems
p. 20	problem-solving	Problem-solving in different fields is based in a different context but is nevertheless problem-solving
p. 20	experience critically	In relation to desired skills of reflecting critically the principles espoused in a democratic society
p. 28	critically aware citizens	A comment that high academic standards do not necessarily produce critically aware citizens as in the context of South Africa
p. 28	critically evaluate	This quality is required for capable entrepreneurial life-role performers (creative learners)
	critical / criticism	Used in sentences which invoke the urgency required for change or to discuss strengths or weaknesses of an approach.

Appendix B (ii) – Document Analysis Grid – Details of Publication 4

Details of Publication 4
South African Qualifications Framework (SAQA) (2012) *Level Descriptors for the South African National Qualifications Framework.* Pretoria: South African Qualifications Framework
Note/s and Quote/s
The level descriptors are devised to support the design and implementation of qualifications; they should bring coherence in learning achievement and facilitate evaluation criteria for national and international comparability and articulation within the NQF (SAQA, 2012, p. 2). There is an expectation that the NQF level descriptors can promote lifelong learning (SAQA, 2012, p. 2). "The philosophical underpinning of the National Qualifications Framework and the level descriptors is applied competence, … ." (SAQA, 2012, p. 3) The applied competencies which are found in all levels of the the NQF are: "-scope of knowledge - knowledge literacy -method and procedure -problem solving -ethics and professional practice -accessing, processing and managing information -producing and communicating of information -context and systems -management of learning -accountability" (SAQA, 2012, p. 3) Applied competence is stated to have three elements: Foundational competence which includes intellectual/academic skills of knowledge together with analysis, synthesis and evaluation, which includes information processing and problem-solving: practical competence which includes the concept of operational context; and reflexive competence incorporates learner autonomy. (SAQA, 2012, p. 3)

In the document, " …'field" implies a particular area of learning used as an organising mechanism for the NQF." (SAQA, 2012, p. 3)

The SAQA (2012, p. 3) states that any word or expression to which a meaning has been assigned in the NQF Act (Act 67 of 2008) will have the same meaning in the SAQA (2012) document and that the Quality Councils will develop separate guidelines for further definitions and help in interpretation of particular words and phrases used in the level descriptors.

The level descriptors are intended to meet the needs of academic and occupational qualifications and the critical cross-field outcomes are embedded in the level descriptors (SAQA, 2012, p. 4).

The level descriptors are generic and it is expected that they will be influenced by field, discipline and nuances of context (SAQA, 2012, p. 4).

It is not necessary for an individual learning programme to meet each and every criterion (SAQA, 2012, p. 5).

There are many references to the descriptors used in Bloom's Taxonomy of Learning Objectives and the Revised version of Bloom's Taxonomy.

They are: demonstrate, interpret, discuss, apply, analyse, evaluate, synthesise, process, apply, select, investigate, manage, identify, justify, validate, interrogate, select, reflect critically, critically review (SAQA, 2012, pp. 5-11).

The term 'critical' and derivatives thereof appear as follows in the SAQA (2012):

NQF Level 7 – "critically reflect" (p. 10)

NQF Level 8 – "critical reflection" (p. 10)

"critically review information gathering" (p. 10)

"apply in a self-critical manner" (p. 10)

NQF Level 9 - "critique of current research and practices" (p. 11)

- "display and ability to critically contribute" (p. 11)

NQF Level 10 – "apply specialist knowledge and theory in critically reflexive, ….. novel ways … ." (p.12)

Appendix B (iii) - Explanatory Notes To The Norms and Standards For Educators February 2000

Knowledge

Knowledge of the specialism (discipline, subject, learning area, phase of schooling) is central to the learning programme and the assessment of content knowledge, concepts and theories, procedural knowledge and strategic knowledge should form a key part of the assessment strategy. p. 5

Foundation Phase (Grade R to Grade 3)
• A study of the 3 learning programmes as prescribed by the national curriculum. These must include the disciplinary bases of content knowledge, methodology and relevant pedagogic theory. p. 18

Intermediate Phase (Grade 4 to Grade 6)
• A study of the 5 learning programmes as prescribed by the national curriculum. These must include the disciplinary bases of content knowledge, methodology and relevant pedagogic theory. p. 18

Senior Phase (Grade 7 to Grade 9)
• A study of at least two subjects which meet the requirements of the learning area specialisations as prescribed by the national curriculum.
• The studies must include the disciplinary bases of content knowledge, methodology and relevant pedagogic theory. p. 19

Further Education (Grade 10 to Grade 12)
• A study of one or more subjects or specialisations suitable for the phase.
• The study must include the disciplinary bases of content knowledge, methodology and relevant pedagogic theory. p. 19

The incumbent of a post as listed in paragraph 1 usually possesses
- qualifications which do not comply with the criteria for approved degrees and/or general teaching diplomas;
- skills and knowledge which have been acquired also through practical training or by experience; and
- basic training which is often not offered by teacher education providers. p. 21

ROLES FOR EDUCATORS IN SCHOOLING
1. Learning mediator
The educator will mediate learning in a manner which is sensitive to the diverse needs of learners, including those with barriers to learning; construct learning environments that are appropriately contextualised and inspirational; communicate effectively showing recognition of
and respect for the differences of others. In addition an educator will demonstrate sound knowledge of subject content and various principles, strategies and resources appropriate to teaching in a South African context. p. 54

7. Learning area/subject/discipline/phase specialist
The educator will be well grounded in the knowledge, skills, values, principles, methods, and procedures relevant to the discipline, subject, learning area, phase of study, or professional or occupational practice. The educator will know about different approaches to teaching and learning (and, where appropriate, research and management), and how these may be used in ways which are appropriate to the learners and the context. The educator will have a well developed
understanding of the knowledge appropriate to the specialism. p. 54

Appendix C – Biographical Questionnaire

Lecturer Data

Dear Participant

To build a more detailed profile of each participant who is engaged in the study of how we construct critical thinking, please be kind enough to complete data on the pages that follow:
biographical, language, schooling
doctoral and or other current study
current academic work and work experience

In accordance with the Letter of Consent, all data will be assigned anonymously or by pseudonym and treated with the upmost confidence at all levels of research including in the process of disposal.
To enter data on the Excel spreadsheet, simply click on the relevant cell, type your details and the cell will increase in size as the characters are added. Return the completed Excel file to the researcher as an email attachment OR if manipulation of Excel is a challenge, please print the relevant pages and return a hard copy to the researcher.
It would be ideal if the turnaround time for this task was 7 days.
If any area of the questionnaire is unclear, please contact the researcher.
Many thanks for your effort and time.

Regards
Carolyn Trim
Email: -------- (personal data removed)
Mobile: ------- (personal data removed)

Biographical, Language and Schooling Data of Lecturing Staff

Biographical					**Language**				**Schooling**				
Code	Gen	Age	Ethn	Relig	Home Lang U/R/W/S*	2nd Lang U/R/W/S*	3rd Lang U/R/W/S*	4th Lang U/R/W/S*	Lang of instr (JP)	Lang of instr (SP)	Lang of instr (HS)	Schooling (Province / abroad) U/S/PU/R**	Highest standard / grade achieved
*U - understand; R - read; W - write; S - speak													
**U - urban; S- suburban; P - peri-urban; R - rural													

Doctorate and / other current study

Initials	Code	Degree 4	Institution	Lang of Instr	Field	Discipline	Topic

Current Academic Work and Experience

Current Academic Work							Experience					
Initials	Code	Published YES/NO	Publishing YES/NO	Lecturing YES/NO	Year Grp/s	Code of Module/s	Do you have Clsroom & / Lecturing Experience?	FP/IP/Sen/FET/Undergrad/Postgrad experience?	No. of Years	Mangmnt Exp JP/SP/HS/Tert	No. of Years	Total No. of Years in Education

Appendix D – Informed Consent letter for lecturer participants

Research Office: Humanities
Prem Mohun
Main Campus Building
Edgewood Campus
University of KwaZulu-Natal
T: 031 260 4557 / 4609
HssrecHumanities@ukzn.ac.za

Researcher: Ms C. F. Trim
[redacted]
[redacted]

22 June 2017

Dear _____ Colleague

I would like to invite you to participate in this research project entitled:

Pre-service teacher education lecturers' constructions and enactment of critical thinking

This study is about how we understand and enact critical thinking in lectures.

Your participation with me in this research is because you are a colleague and lecturer who lectures across disciplines and across a variety of year groups in the undergraduate Foundation Phase and Intermediate degree programmes. The reason we are doing this study is to gain insight into the conceptions of critical thinking that is intended to be an outcome of higher education thus it is to further our thinking in this area of our work. The research findings will be published in a PhD thesis registered at the University of KwaZulu-Natal (UKZN). It is a requirement for PhD candidates to publish at least one article in a recognised academic journal; and work in various stages of completion is presented in academic forums.

The possible risks to you in taking part in this study are that the research will be conducted in this organisation only, so there is a chance that you can be identified as a respondent. However, the name of the institution at which the study is conducted will be anonymous. The research includes video and audio recordings of lectures.

The following steps have been taken to protect you from identification:

- Your details (academic and professional, biographical, language, school, doctoral and current study and previous experience) will be placed on a data production sheet and you will be referred to by a code known only to the researcher
- the coding and your data will be separated and the details will be placed in a secure location
- in the data analysis and report writing phase of the research you will be afforded the opportunity to see your data and interpretations made by the researcher; there will be the chance to check meaning and accuracy of both
- all audio and video material will be securely stored and will be for the sole use of the researcher and may be viewed by the supervisor and external moderator on request (all parties are bound by confidentiality clauses at their institutions)
- video and audio clips to be used for presentations will be only be used with the express permission of those featured in such audio or video clips

- all data collected in the research will be disposed of by means of the methods indicated to the ethics committee at UKZN

I am sure we will benefit from this study as lecturers of pre-service teachers because our sharing expands our own horizons and those of the teachers-to-be and consequently the learners they will teach.

It is planned that once you accept to participate, that you will, by prior arrangement with the researcher, attend an initial interview, be visited on a minimum of four occasions for video recording of timetabled lectures. You will then be asked to view your video, note points in the video where you identify enactments of critical thinking and to meet with the researcher on an individual basis to hold discussions based on the video footage in a semi-structured interview setting. Meetings will take place outside of _____ employment hours to ensure that recording opportunities are conducted in peace and quiet.

While I greatly appreciate your participation in this important study and the valuable contribution you can make, your participation is entirely voluntary and you are under no obligation to take part in this study.

If you do choose to take part, and an issue arises which makes you uncomfortable, you may at any time stop your participation with no further consequences.

If you experience any discomfort or unhappiness with the way the research is being conducted, please feel free to contact me directly to discuss it, note too that you are free to contact the research office (indicated above).

Should any difficult personal issues arise during the course of this research, I will endeavour to see that a qualified expert is contacted and able to assist you.

Kind regards,

Carolyn Trim

Appendix E – Extract of Interview Transcript of P2

Int: Ja and then there were a few people who were engaging in what you're saying and thinking further than just, they weren't just thinking about the test, they were thinking about what they had to use to be successful in the test ja. Umm then there was one student asked the radius was half the diameter and then I thought okay somebody is confused about radius and diameter and you said that it was that the radius is half the diameter and then you drew the BODMAS and PEMDAS on the board?

P2: Right which I think the mistake we make is that we will leave our PEMDAS, for some reason I don't know why we leave our PEMDAS, we just focus on our BODMAS. And when you go through these two terms yeah well BODMAS and PEMDAS. Alright, so you will notice the last part and my DAC are the same for both but now when you come here for BODMAS you have a B O D right whereas here you have P E so usually students tend to follow BODMAS only but once you explain everything with regards to PEMDAS you just throw them off. because here you have BODMAS you have brackets and division right but uh division and uh PEMDAS right so you notice like multiplication and addition here yeah multiplication and division. yeah i think i think it is fine alright so usually what happened we have the operators which are being sent back and forth or so we have to be careful with that because usually we have multiplication and addition and subtraction. so that's fine trying to explain that first part.

Int: The parenthesis part…Right yeah I think that the PEMDAS works better for the equations, more advanced equations especially the ones with exponents. Wasn't that the point I think?

P2: The thing is like I don't want to use brackets, I don't want to use parenthesis so now you are being taught using brackets so now what happens when you show me the equation that has parenthesis?

Int: Then they do not know what to do yeah…

P2: Then they do not know what to do right so i feel that we should be introducing both of this to students.

Int: I must say I have never heard of PEMDAS. That was a new one for me. I don't think it was around when I was at school. I'm not sure I can't remember but anyway I wish I had known it because it would have given me taught me what to do with exponents. That is why I could not do algebra, because nobody told me what to do with it. it was quite nice sitting in that lecture actually. Ja. So uh ja and you had some examples for the students to do and you explained it to you and then somebody asked about the strength of multiplication and division of the acronym and when the multiplication and division could be used interchangeably.

P2: Right you can when you use both because this trend strand is more or less the same. because when you group them you find that they fall more or less in the same grouping so you definitely can use them.

Int: Ja I wonder if that stretched the students to think harder about it. I was just wondering as I was sitting there that what did the ability of some of the students was and some of the kind of teaching they had. Whether they actually were with you or not. I don't know.

P2: Because like, you know like when we have an equation say 2 divided by say 5times 2 and then you have 2 times 5 divided by 2.

Int: Don't you just do the one that's most convenient?

P2: Alright so that is why the student has to understand what's going on here. alright so we have division multiplication right for a student who was being obvious we would just go straight and say oh division and multiplication so you just go straight here.

Int: Ja okay. Which means he has to work with fractions and decimals right?

P2: Right which is fine as well but for PEMDAS you have multiplication and division that's all so it depends on how you presented the equation.

Int: Yeah sure. Got it. Okay so then you asked if you should explain further, the student wanted to try some examples and so they did. And the students engaged in the exercise and then the lecturer covered the solutions and asked who had a cheat solution of 20 for number 1 and then you showed them the BODMAS steps and helped those who didn't get it correct. Ja and then number 4 was a PEMDAS example that needed to be applied to the calculation so the students did not understand the process until it was explained. Ja and then this started at 9:30 hey ja and at 10:18 the students decided that they would approach you to ask individual questions and then they started talking amongst themselves.

P2: Ja the reason that I was doing that every night because you noticed that I have a very long class so I thought that it's always much wiser for me even though there were not many students at that point, but usually so many students so I lecture them and then I stop and I asked them to come in and present their problem individually.

Int: Ja otherwise they get left behind and then the lecture is finished and they still haven't got anything clarified.

P2: Yeah, because some of them are very shy. They will never raise a hand or what so ever and say everything fine then come exam or test… That's where you start noticing and it is already too late.

Int: Ja that's true. I'm just wondering this thing about criticality, you know, and just how critical the students are about what they're doing. You know, we apply these skills all the time to our work and our preparations. I wonder what they thinking when they sitting there?

P2: Right uh you never know which why we have to pose a question every now and then. So that to kind of give you an idea what's going on in their minds. Since you don't say anything. Like a student is with you but is far away.

Appendix F – Extract of Interview Transcript of P3

1. Int: There is critical thinking in this case where you saying to someone, “Have you done this and done this, we've done this today in the lecture and tomorrow or the next time I see you we're going to be covering these these components of music and it's an anticipation. We building something here, we're building we're building a picture…
2. P3: Yes I suppose that’s right.
3. Int: You're in a way of expressing ourselves.
4. P3: Yeah and pieces of the puzzle. I suppose putting little bits in that by the end… they maybe have a full picture because now I've also just so you picked up on what we're going to do today what we're going to do tomorrow. I’ve just said there’s two subsystems, pitch at rhythm so maybe that is your understanding that we're pulling it apart but ultimately when we look at it it's going to be all of it together and that's what's so nice with teaching the recorder simultaneously to doing the theory because and I don't think I've teach recorder in this lecture at all but what we've done today is now they’re learning…learn to read music, they have to apply it to the recorder and then the rhythm obviously a facet of that as well…
5. Int: So it’s deconstructing and then reconstructing.
6. P3: Reconstructing, and ja or constructing because then they don’t know yet…
7. [Video plays - lecturer is talking to the lecture group].
8. Inaudible
9. Int: Okay so that was at 55 hey?
10. P3: 55 Yes
11. Int: And then it was ta ta ta ta and the shhhhh
12. P3: So here I’d say it is critical thinking. All of these little clapping exercises…(inaudible)
13. Int: So physical performance or
14. P3: Ja, I think there is a definite link between the physical performance and the cognitive understanding then performance. And it is funny because when you sit in the test you watch them do it. So with the physical you know they’ll sit there at the desk and tap.
15. Int: Oh wow.
16. P3: It is interesting because you can see it in their …
17.
18. P: And drawing in stuff from lecture is about temper and then applying it
19. Int: And that's where I went out but I seem to have quavers and semi-quavers have been been flagged and this went on to speak more about ……oh that was the second lecture. The second lecture. Yes because I had taken notes. Here I had started writing notes about uhh ..
20. P3: Oh yes because you’re timing here because this must have been the other lecture you came to , was this the other lecture you came to?
21. Int: Yes where I started taking notes. Ja so I suppose the things that we’ve seen and the things that we’ve talked about are directly related to what enactments where are of critical thinking that are taking place in the lecture but I think about the other question that is why do we conceive it the way that we do and when I say that I mean myself too. When I am identifying things and when I am seeing things in your lectures and in other peoples’ lectures and I am saying well why do I think that’s critical thinking? What so I know about it really?
22. P3: well.
23. Int: What informs that?
24. P3: And if I can’t just say I want to leave here with a with maybe a different idea than when I arrived because when I arrived I definitely thought critical thinking is it is extending their thinking first of all. And is making them question things that they maybe, umm, views that that they held or opinions that they had, for example, who is now having looked at that, I

think it is definitely more than that. So I think it can be perhaps I was thinking of it had a lofty way, it can be a little more simplistic ummm because quite honestly, I thought you're not going to see much critical thinking in my lecture, because sometimes you worry, the transference of knowledge is not really critical thinking. And I suppose again it depends on the way that you present it, because you can just presented as, and this is a crotchet, this is a minim and this is a quaver and

25. Int: This is cognitive engagement.
26. P3: Ja so I think maybe it comes down to your style and your way of presenting and but I think that there were more elements of critical thinking in this because of the way it as presented. So making them feel it, ja because it does test their cognitive ability.
27. Int: Ja I don't know where I got my concepts of critical thinking from like I have read so much about it. And then I think okay i am more confused than when I started out. Really truly i am not just …
28. P3: SO your PhD is doing what it should.
29. Int: Ja what do you think makes you think that its critical thinking or that how do you, what do you think critical thinking is. I mean you've said you've going away with having seen other things.
30. P3: I think that maybe mine has been informed by my own tertiary experiences and maybe also where I feel that I've grown the most. And I definitely feel I grew in terms of my university career the most in seminars you know where I don't know if we have anything like this here but music history, every semester there would be a seminar and you had to choose your seminar and then it was a lengthy period I mean it was most of the afternoon. You had to do some very intense reading and then talking about it and those seminars that we did once a semester shaped what I think critical thinking is because we were probably given provocative readings and questions that then did challenge your thinking. So I think maybe, maybe that's where mine came from, is that critical thinking has to challenge your thinking has to maybe change your thinking to get your opinion. And maybe I've been very hard on myself as a lecture because I think I don't do enough of that here. Because it's just not the time scope and we don't have the small groups, the seminars always quite small, you know, you'd have no more than 12 people. And people are required to talk you know you could leave without having engaged and participated.
31. Int: You couldn't hide. Nowhere to hide.
32. P3: Exactly you had to have done the reading and I those were kind of quite pivotal in terms of my university career in terms of shaping my thinking and maybe that's where it comes from.
33. Int: Mm ja, if I consider my uhh my education I don't think it was ever called critical thinking.
34. P3: No I think ja I'd agree with that.
35. Int: But as you say tertiary is probably the place where I was most challenged, you know i am always challenged. Cognitively challenged, academically challenged and challenged in values. Not just cognitively, in values and in attitudes and my whole epistemology of life has been challenged through that. Through going through a tertiary institution and then also through travel …
    P3: Absolutely.

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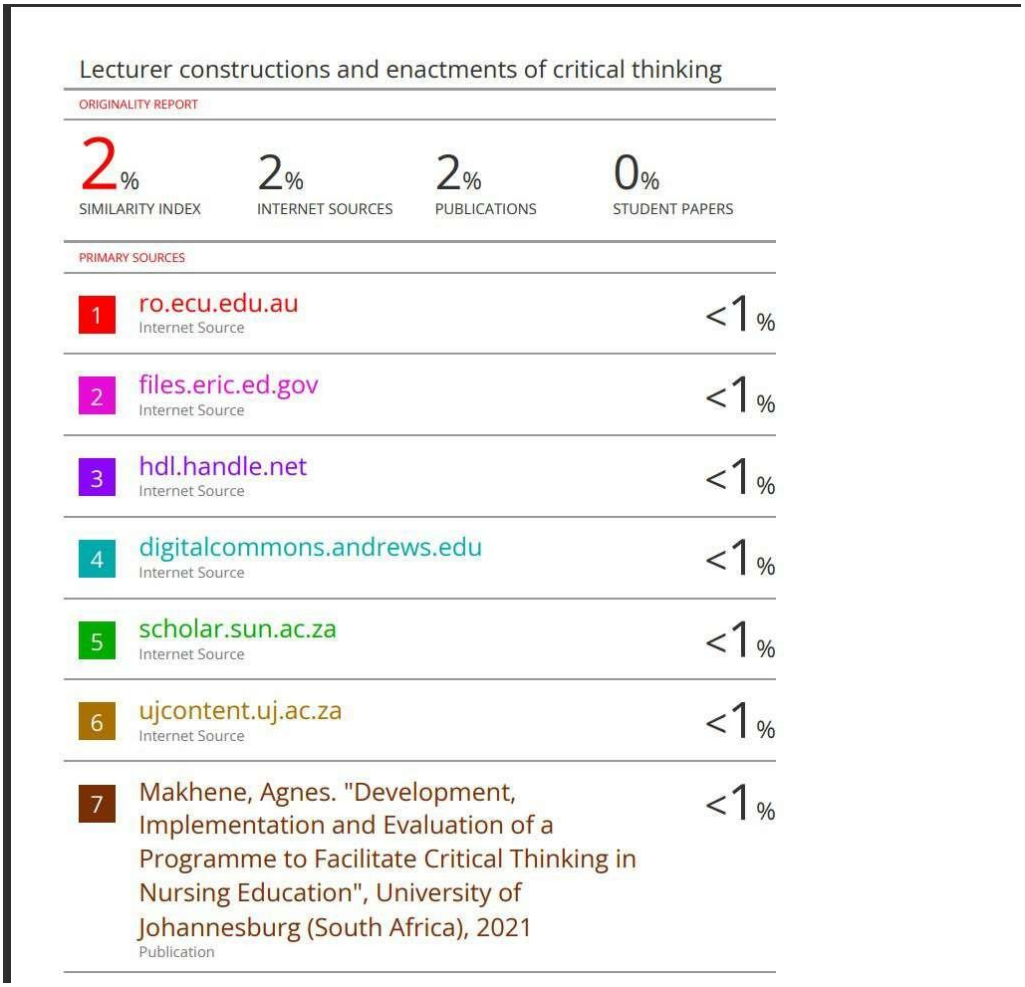

Lecturer constructions and enactments of critical thinking

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