Knowledge in Accounting: Using a threshold concept lens to identify knowledge of financial instruments in an Accounting course, as experienced by students at a South African university

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Compulsory declaration

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to and quotation in this dissertation from the work or works of other people has been attributed, and has been cited and referenced.

Signature: Signed by candidate Date: 9 April 2020

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List of abbreviations and acronyms

Abbreviation	Explanation
ACI	African, Coloured and Indian
CA(SA)	Chartered Accountants of South Africa
CTA	Certificate in the Theory of Accounting
EDU	Education Development Unit
ER	Epistemic relations
ETL	Enhanced Teaching–Learning Project
FV	Future value
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
IFRS for SMEs	International Financial Reporting Standard for Small and Medium-sized Entities
ITC	Initial Test of Competence
KPI	Key Performance Indicators
LCT	Legitimation Code Theory
SAICA	South African Institute of Chartered Accountants
SD	Semantic density
SG	Semantic gravity
SR	Social relations
TC	Threshold Concept identified in this research
TCF	Threshold Concept Framework
TVM	Time Value of Money
UCT	University of Cape Town

Abstract

Knowledge in Accounting: Using a threshold concept lens to identify knowledge of financial instruments in an Accounting course, as experienced by students at a South African university.

This qualitative research aims to identify the threshold concepts in financial instruments using Meyer and Land's Threshold Concept Framework (2005) and applies the dimension of Semantics and Legitimation Code Theory (Maton, 2014) to analyse whether semantic gravity and semantic density are stronger or weaker in the threshold concepts. The analysis points to five threshold concepts in the financial instruments module. It further aims to explore whether African, Coloured and Indian students' exposure to these threshold concepts results in troublesome knowledge and/or transformation in understanding and thinking in a second-year Accounting course at a South African university. Triangulation is used to confirm the authenticity and consistency of the data emerging from the identification of the threshold concepts. Using Semantics, this research illustrates that the five threshold concepts possess weaker semantic gravity due to the abstract nature of the threshold concepts and stronger semantic density is present due to the complex and dense terminology inherent in financial instruments. Evidence from a general survey, interviews and summative assessments conducted with students registered for an Accounting course shows that exposure to the threshold concepts resulted in troublesome knowledge and/or transformed understanding. Identifying the threshold concepts could make specialised Accounting knowledge more explicit to students and exploring the knowledge experienced as troublesome and the transformed understanding experienced provides room for debate around pedagogy and curriculum reform.

Key words: Accounting; financial instruments; knowledge practices; Legitimation Code Theory; Semantics; threshold concept; Threshold Concept Framework

CHAPTER 1 INTRODUCTION

1.1 Background and contextualisation of this research

This research was inspired by the disciplines of Accounting and Higher Education and how these coalesce to influence knowledge practices in a second-year undergraduate Accounting course (Financial Reporting II) at a South African residential university. This qualitative research aims to identify the threshold concepts in the financial instruments module of this course to shed light on knowledge practices in Accounting.

Meyer and Land (2005) indicate that threshold concepts are likely to be transformative, irreversible, integrative, bounded and possibly troublesome. This research only focuses on the troublesome and transformative characteristics.

Using Semantics in Legitimation Code Theory (LCT) (Maton, 2014), this research analyses the extent of abstraction and the degree of the complexity of terminology of the threshold concepts in financial instruments. It further aims to explore whether exposure to the threshold concepts in financial instruments results in knowledge being troublesome and/or resulting in a transformed understanding for African, Coloured and Indian[1] (ACI) students registered for Financial Reporting II.

1.2 Rationale of the research

This research was motivated by my teaching context in Accounting within the Education Development Unit (EDU) at the University of Cape Town (UCT). The EDU serves as the Commerce faculty's flagship equity programme which aims to attract ACI and Chinese students who experience disparities in both education and lived experiences on entry into higher education (Education Development Unit Website, 2019). Students who are not part of the EDU are classified as 'Mainstream'. Students who are part of the EDU programme receive wrap-around support, which includes smaller lectures, guidance with adjusting to university and access to psychological

[1] The definition of 'African, Coloured and Indian' (ACI) derived from the University of Cape Town's Annual Report (2017:27) is applied for this research

support. The decision to focus on ACI students was prompted by two statistics. The Department of Higher Education and Training in South Africa indicates that 44% percent of ACI students registered for a three-year degree graduate within five years (Scott, 2018). In Financial Reporting II, ACI students comprise 57% of the student cohort registered for the course (Financial Reporting II Course Evaluation, 2018). These statistics prompted this research to focus on knowledge practices in Accounting and whether these practices influence ACI students' learning experience in higher education.

Maton (2014) suggests that until all participants and their experiences are incorporated into the higher education landscape, there is scope for a new excluded group to emerge. In South Africa, student activism in recent years has prompted higher education to critically revisit its established norms and practices viewed as exclusionary by some students. The findings emerging from this research may contribute meaningfully to this debate.

To understand knowledge practices within Accounting, my previous teaching experience in Financial Reporting II encouraged me to select a specific module in the Financial Reporting II curriculum, namely, financial instruments, to identify the threshold concepts. This research suggests that the threshold concepts identified serve as a lens into the knowledge practices in Accounting. Threshold concepts act as "a portal, opening up a new and previously inaccessible way of thinking about something" where acquisition of the threshold concept results in a "transformed understanding, interpretation or viewing something" without which a student cannot progress further (Meyer & Land, 2005:3). A more extensive review of a threshold concept is included in section 1.4 – *Explanation of key terms* and in Chapter 2 – *Literature review*.

Using the threshold concepts identified in the financial instruments module, this research attempts to establish an enhanced understanding of the complexity of Accounting language by incorporating ACI students' experiences when engaging with the financial instruments module. As an academic discipline, Accounting is loaded with terminology and specific concepts that appear conceptually dense.

This research explores the troublesome characteristics in the Threshold Concept Framework (TCF), developed by Meyer and Land (2005), that may emerge from the

divide between students' primary Discourse and the secondary Discourse of Accounting in the context of financial instruments.

'Discourse' is defined as a "socially accepted association among ways of using language…thinking, feeling, believing, valuing, and acting that can be used to identify oneself as a member of a socially meaningful group …" (Gee, 1996:131). 'Discourse', with a capital "D" refers to "the ways in which people enact and recognize socially and historically significant identities" while 'discourse' with a small "d" refers to the "analysis of language in use" (Gee, 2015:1). Gee (2008) separates 'Discourse' into 'primary Discourse' and 'secondary Discourse'. Primary Discourse is defined as the Discourse "to which people are apprenticed early in life during their primary socialization as members of particular families within their sociocultural settings" (Gee 2008:168). The term also encompasses identity, which is directly linked and influenced by the home environment.

In relation to Discourse, Bourdieu asserts that social positions of actors in the higher education landscape are based on "cultural capital" (Maton, 2014:34). Bourdieu argues that cultural capital presents itself in an "*objectified state* (original emphasis), *embodied state* and *institutionalised state"* (Laberge, 1995:137–138). Cultural capital (Bourdieu, 1986) refers to the "knowledge and the 'know-how' of actors within a particular field" (Maton, 2014:34). This research conducted into knowledge practices in Accounting supports the finding by Galloway (2015) which explores the notion that cultural capital is closely related to the concept of Discourse. The foundation of LCT lies in the work of Bernstein (2000) and Bourdieu (1986), hence its relevance for this research. This research further investigates whether EDU and Mainstream students' primary Discourse influences the disciplinary knowledge being troublesome when engaging with the threshold concepts in financial instruments.

Many EDU students originate from rural areas in South Africa where primary and secondary schooling occur in under-resourced environments (Pym & Paxton, 2013). A myriad of challenges confronts EDU students. For example, language may represent a challenge as a disconnect arises between students' first language and the university's English medium of instruction.

An inspection of the formal student evaluation conducted at the UCT in May 2018 in Financial Reporting II revealed that 43% of EDU students (78% of Mainstream

students) listed English as their first language (Financial Reporting II Course Evaluation, 2018:2). With this as the context for the primary Discourse of EDU and Mainstream students in relation to language, this research assesses whether the threshold concepts identified in financial instruments influence or impact the gap between students' primary Discourse and the secondary Discourse of Accounting. In addition, this research attempts to establish whether language in financial instruments impacts the troublesome knowledge through troublesome language as experienced by ACI students.

Finally, investigating the financial instruments module is relevant from a pedagogical perspective as I find the topic technically challenging to teach due to its complexity, the degree of integration in thinking required and the discipline-specific terminology students are required to comprehend and apply. I wish to develop an awareness of whether exposure to the threshold concepts in the financial instruments module results in troublesome knowledge and/or transformation in ACI students understanding and thinking.

1.3 Significance of this research

Identification of threshold concepts in financial instruments could help make implicit disciplinary knowledge more explicit to students as they construct knowledge in Accounting. In doing so, lecturers could reduce some of the challenges students experience with aspects of disciplinary knowledge being troublesome as students become more aware of knowledge practices that experts engage with in Accounting.

This research may also influence teaching and learning activities as lecturers become cognisant of the troublesome knowledge ACI students experience, which could prompt the altering of pedagogy as lesson plans are tailored towards the troublesome knowledge experienced.

1.4 Explanation of key terms in this research

This section elaborates on key terms that play a significant role in this research. A brief overview of the following key terms is provided:

- Threshold concepts

- Legitimation Code Theory – Semantics and knowledge practices
- Financial instruments (International Financial Reporting Standard for Small and Medium-sized Entities ®, 2015)

Threshold concepts

Threshold concepts are considered “a portal, opening up a new and previously inaccessible way of thinking about something” (Meyer & Land, 2005:3). This research focuses on two characteristics that may be associated with threshold concepts, namely, troublesome knowledge and transformation.

A threshold concept may involve aspects of troublesome knowledge as students may perceive the subject to be “alien or foreign” (Cousin, 2006:4). Meyer and Land (2003) cited Perkins (1999) to propose that knowledge may be experienced as troublesome for an array of reasons, namely, ritual, inert, conceptually difficult, alien, tacit knowledge and troublesome language. Troublesome knowledge will not present itself in every threshold concept but may appear frequently (Meyer & Land, 2005; Barradel & Kennedy-Jones, 2015). For example, in this research, one student participant experienced troublesome language when engaging with the term ‘business model’ encountered in the financial instruments module. The student participant thought the term referred to the way an entity conducts business rather than the intention behind holding a portfolio of financial assets.

Threshold concepts are transformative in nature as they may result in a powerful shift in students’ ability to understand a discipline or subject area once mastered (Meyer & Land, 2005). This transformation may also signal a permanent conceptual shift (Walker, 2013) as the mastery of threshold concepts becomes engrained in the understanding of the topic.

This transformation may also alter students’ “way of knowing” and “being in the world” (Rodger, Turpin & O’Brien, 2015:546). For example, in this research, one student participant indicated that understanding that a ‘loan’ could be an asset or a liability depending on whether an entity was the issuer or the holder was a transformative experience as it signalled a significant conceptual shift in understanding. Meyer and Land (2003) suggest that this conceptual shift may occur instantly or over a period of time.

In summary, Meyer and Land's seminal research into threshold concepts is used to inform identification of the threshold concepts in the financial instruments module. Following this, the characteristics of troublesome knowledge and transformation are used to explore whether exposure to the threshold concepts in the financial instruments module resulted in the emergence of troublesome knowledge and/or transformed understanding for ACI students.

Legitimation Code Theory

LCT stems from social realism as it serves as a framework to explore who or what legitimises knowledge, knowledge practices and dispositions within a field (Maton, 2014). Knowledge practices are defined as "specialized knowledge" and represent "powerful claims to legitimacy" (Maton, 2014:24). LCT serves as a "conceptual toolkit" which assists in investigating "actors' dispositions, practices and contexts, within a range of fields" (Maton, 2014:17). LCT analyses these social interactions using certain dimensions of LCT, namely, Autonomy, Density, Temporality, Specialization and Semantics (Maton, 2014).

This research uses the Semantics dimension to analyse the threshold concepts identified in the financial instruments module, which may shed light on some of the complexities inherent in the discipline of Accounting. This is discussed in Chapter 3 – *Overview of the Accounting discipline*.

Financial instruments

'Financial Instruments' is a term defined in the International Financial Reporting Standard for Small and Medium-sized Entities (IFRS for SMEs) as follows: "A financial instrument is a contract that gives rise to a financial asset of one entity and a financial liability or equity of another entity" (IFRS for SMEs, 2015:55). The Accounting knowledge of financial instruments is explained in more detail in Chapter 3 – *Overview of the Accounting discipline*.

1.5 Research objectives and questions

This research examines the following pertinent sub-questions influenced by the TCF (Meyer & Land, 2003, 2005), LCT (Maton, 2014), appropriate research conducted in the threshold concepts domain (King & Felten, 2012; Rodger et al., 2015), relevant

research conducted using Semantics (Blackie, 2014; Myers, 2017) and other relevant Accounting Education studies (Myers, 2016; van Wyk, 2011).

The three research questions relevant to this research are outlined below.

Research question one: What are the threshold concepts in the financial instruments module?

The literature suggests that threshold concepts are discipline-specific (Cousin, 2006). For this reason, this research focuses on a single module, 'financial instruments' within the Accounting curriculum in a second-year Accounting course at a South African residential university, to identify the threshold concepts. Identification of the threshold concepts in this research is a key focus area for two reasons.

First, this research suggests that threshold concepts represent a lens into knowledge practices generally revered in Accounting. Knowledge practices represent "languages of legitimation" that signify claims to legitimacy and success within a field (Maton, 2014:24).

Second, identification of threshold concepts may assist in exploring whether knowledge experienced as troublesome emerged and/or a transformation of understanding was experienced by ACI students when engaging with the threshold concepts in financial instruments (see Research question three below). This line of inquiry may provide evidence as to whether the threshold concepts identified are indeed threshold concepts, as two of the fundamental characteristics associated with threshold concepts are that they are possibly troublesome and/or transformative in nature.

Research question two: Using the threshold concepts identified in financial instruments, are semantic gravity and semantic density stronger or weaker?

To provide insight into the knowledge practices in Accounting, Semantics is used to analyse the degree of abstraction and the extent of complexity of key terms inherent in the threshold concepts identified in the financial instruments module.

Semantic gravity refers to the extent to which knowledge practices are anchored in its context (Maton, 2014) or the extent of abstraction of a concept (Blackie, 2014). A knowledge practice coded as having stronger semantic gravity indicates that meaning is firmly rooted in its context, whereas weaker semantic gravity indicates that knowledge practices are less reliant on the context (Maton, 2014), thus indicative of greater abstraction (Blackie, 2014).

Semantic density refers to the extent of complexity of key terms, concepts or phrases (Maton, 2014). A knowledge practice coded as having stronger semantic density illustrates that meaning is anchored within practices while weaker semantic density illustrates that meanings of key terms, concepts or phrases are less condensed within knowledge practices (Maton, 2014).

Research question three: Did the exposure to the threshold concepts in financial instruments result in troublesome knowledge and/or transformed understanding for ACI students?

Barradell (2013) asserts that Meyer and Land's (2005) research on threshold concepts emphasises *troublesome knowledge,* which may be the reason for a fair amount of research concentrating on this characteristic. A study conducted in Health Sciences focused on systematically identifying troublesome knowledge experienced to identify possible threshold concepts (Rodger et al., 2015). In this research, the responses obtained from ACI students in the interviews may help establish whether knowledge being troublesome relates to the exposure to the threshold concepts identified in the financial instruments module. Doing so may assist in determining whether the threshold concepts in financial instruments are in fact threshold concepts due to the troublesome knowledge ACI students experience. An analysis of the types of troublesome knowledge experienced is also included and consideration is given to the role of Discourse and whether ACI students' troublesome knowledge is influenced by the disconnect between their primary Discourse and the secondary Discourse of Accounting.

The characteristic of transformation is seen as the cornerstone of threshold concepts and from which the remaining characteristics of troublesome knowledge, bounded, integrative and irreversibility flow (Walker, 2013), making it critical to explore this

characteristic in the research. Focusing on the transformation characteristic may also help distinguish threshold concepts from core concepts in a discipline. Meyer and Land (2003:4) describe a core concept as a "conceptual building block" that requires understanding but does not result in a significant shift in one's perception of the discipline.

This research analyses whether ACI students' exposure to the threshold concepts resulted in a transformed understanding and thinking – doing so may provide further evidence of the concepts identified as threshold concepts rather than core concepts. An awareness of significant conceptual shifts experienced as ACI students are exposed to the threshold concepts in financial instruments could provide insight into whether their understanding has altered in the knowledge construction process.

As shown above, ACI students' experiences form an essential component of this study as the affective component of learning and the notion of epistemic access may significantly influence whether the student is able to master the concepts within a topic. Shay (2015:440) refers to epistemic access as the "'know that' and 'know how' of the disciplines".

Figure 1 illustrates the objectives and flow of this study.

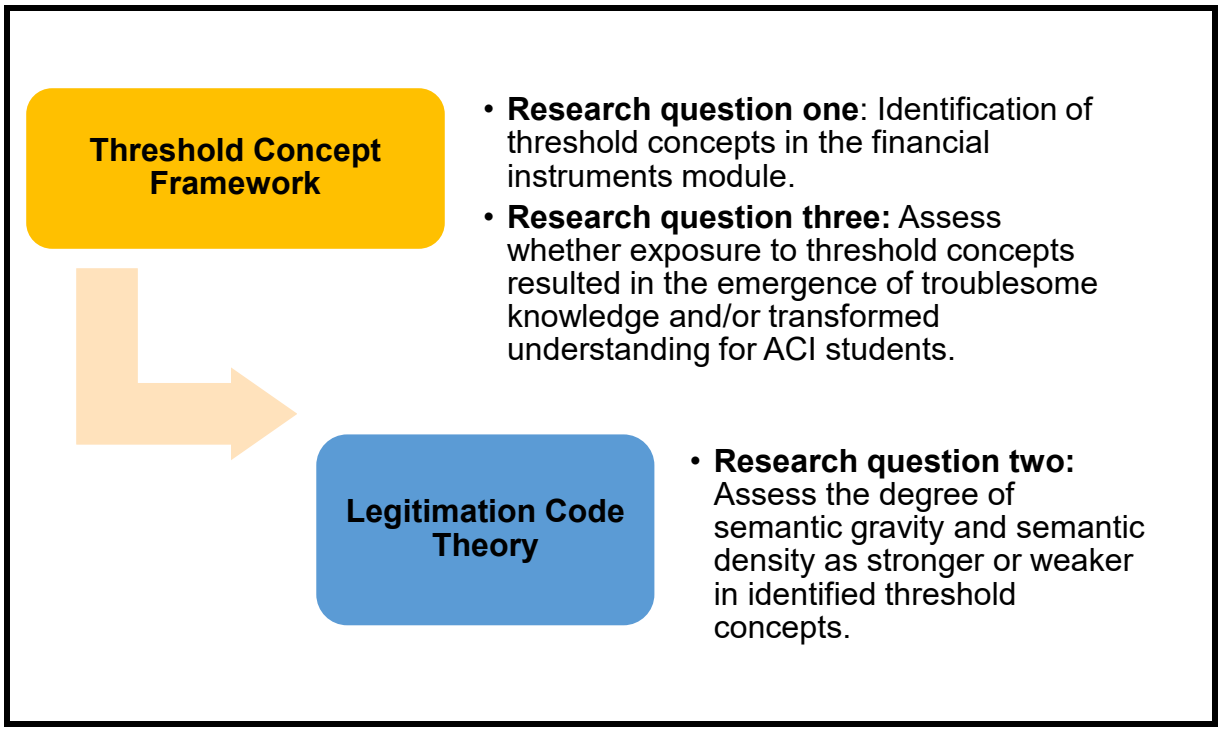


Figure 1: Graphic illustration of the frameworks utilised in this research and how they correlate to the research questions

Summary of research objectives and frameworks

The TCF and its characteristics are used to inform identification of the threshold concepts in the financial instruments module and assess whether exposure to the threshold concepts results in disciplinary knowledge experienced as troublesome and/or transformed understanding and thinking for ACI students. The LCT dimension of Semantics is utilised to analyse whether semantic gravity and semantic density are stronger or weaker in the threshold concepts identified. The findings emerging from these lines of inquiry may contribute to an enhanced understanding of knowledge practices in Accounting which could, in turn, influence pedagogy and curriculum reform.

1.6 Brief outline of research design and methodology

This qualitative study collected data in five stages to answer the three research questions outlined in section 1.5. Stages one and two collected data from three focus groups held with assistant lecturers and a semi-structured interview with an Accounting lecturer to identify the threshold concepts. Stage three, a general survey, focused on assessing students' initial understanding of the threshold concepts which allowed purposeful selection of students for stage four and enabled a comparison among student participants' general survey responses and objective test answers. This comparison sought to ascertain whether transformation had occurred. Stage four focused on collecting and analysing data from student participants in interviews and stage five was analysis of the data collected from student participants' objective tests to establish whether disciplinary knowledge was experienced as troublesome and/or transformed understanding and thinking was experienced when student participants were exposed to the threshold concepts in the financial instruments module.

To analyse the data collected from stages one and two, In Vivo coding (Saldana, 2013) was used to identify key terms and themes. An independent review of the coding from the data collected from focus groups and the semi-structured interview was carried out by an Accounting subject expert.

Triangulation was deemed to have been achieved, given the convergence of the data from stages one, two and four. The concepts identified in stage one and two were

threshold concepts given the troublesome knowledge and/or transformation experienced by student participants in stage four.

The Semantics dimension in LCT was used to assess whether semantic gravity and semantic density were stronger or weaker for the threshold concepts identified in stages one and two of the data collection.

Ethical clearance for this research was obtained from the School of Education Research Ethics Committee at UCT in June 2018 (Appendix E).

1.7 Outline for the remainder of the study

The remainder of the study seeks to answer the research questions articulated in section 1.5 of this chapter.

Chapter Two provides an overview of the literature and previous research studies conducted using the Threshold Concept Framework (Meyer & Land, 2005), Legitimation Code Theory (Maton, 2014) and other relevant studies in Accounting Education. Chapter Three furnishes an outline of the Accounting discipline and describes the location of this study. Chapter Four explains how this research was collected and analyses the data pertinent to answering the three research questions outlined in section 1.5. Chapter Five presents the results and findings emerging from the data analysis. Lastly, Chapter Six summarises the findings from these lines of inquiry and identifies possible areas for further research and the limitations of this study.

CHAPTER 2 LITERATURE REVIEW AND THEORETICAL FOUNDATION

This chapter outlines Meyer and Land's seminal research (2005) into threshold concepts through the Threshold Concept Framework (TCF), together with criticism emanating from the framework. An overview of Legitimation Code Theory (LCT) is also provided as it forms the theoretical foundation in this research. This chapter commences with a review of knowledge structures (Bernstein, 2000) and knowledge practices, as these inform LCT (Maton, 2014). Following this, the chapter delves into the TCF, related characteristics associated with threshold concepts and how the TCF is influenced by constructivism. Relevant studies conducted using LCT and TCF are included to support and frame this research.

2.1 Knowledge structures and knowledge practices

Bernstein's (2000) initial categorisation of disciplinary knowledge structures suggest a mutually exclusive distinction between hierarchical and horizontal knowledge structures. Research now shows that knowledge structures are rather found on a continuum between these two knowledge structures (Myers, 2016), which Muller (2007) refers to as verticality within a discipline. Verticality refers to the process of development of theories (Muller, 2007).

A hierarchical knowledge structure is characterised as "coherent, explicit and systematically principled" and it asserts that established rules control "access, regulating transmission and regulation evaluation" (Bernstein, 2000:157). Hierarchical knowledge structures endeavour to construct "general propositions and theories" which amalgamate knowledge learned at the "lower levels" (Bernstein, 2000:161). Hoadley and Muller (2010) assert that Mathematics and Science as disciplines are more hierarchical in nature, as seen in Figure 2, and are therefore suited to being learned under the guidance of experts in these fields. Bernstein asserts that hierarchical knowledge structures function at "abstract levels" and are fashioned through an "integrating code" (2000:161). This integration refers to the process whereby new knowledge is amalgamated with prior knowledge learned, and may result in instances whereby future knowledge construction may be halted if students

experience any troublesome knowledge within a more hierarchical knowledge structure (Hoadley & Muller, 2010).

In relation to verticality, disciplines that show evidence of a more hierarchical rather than a more horizontal knowledge structure possess a “high degree of verticality” (Myers, 2016:82), which illustrates that theories develop through integration (Muller, 2007).

Professional accountants’ education appears to resonate with Bernstein’s definition of a hierarchical structure as the competencies viewed as legitimate within Accounting are in accordance with the Competency Framework regulated by the South African Institute of Chartered Accountants (SAICA). The Competency Framework refers to the professional skills Chartered Accountants in South Africa are required to demonstrate on entry into the Accounting profession (Competency Framework, 2016). Research into the knowledge construction process in a first-year Accounting course (Myers, 2017) established that Accounting is strongly boundaried. These boundaries are enacted by the implementation of accounting standards developed by the International Accounting Standards Board (IASB). Discussion around the role of SAICA and the IASB is explored further in Chapter 3 – *Overview of the Accounting discipline.*

A horizontal knowledge structure is defined as “specialised languages with specialised modes of negotiations” (Bernstein, 2000:157). These are commonly associated with Humanities and Social Sciences (Bernstein, 2000). One fundamental difference emerging from hierarchical and horizontal knowledge structures is that integration of existing knowledge with new knowledge is more prevalent in more hierarchical knowledge structures, whereas new knowledge within a horizontal knowledge structure is seen as separate to existing knowledge. In a discipline with a more horizontal knowledge structure, inability to master a concept would not hinder the ability to understand another concept (Myers, 2016).

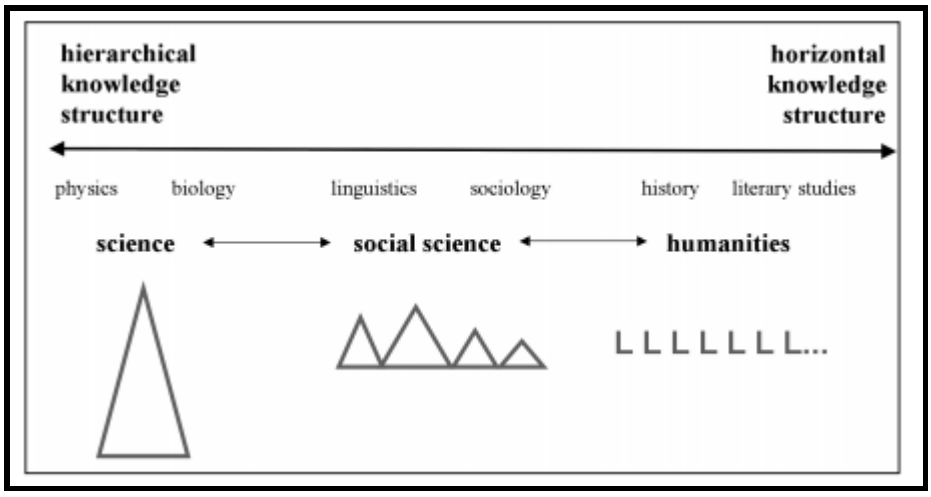


Figure 2: Hierarchical and horizontal knowledge structures along a disciplinary spectrum (Martin, Maton & Matruglio, 2010:438)

Maton (2014:24) refers to knowledge practices as "languages of legitimation", as actors employ particular practices and in so doing, express legitimacy for their actions. These knowledge practices signal the basis of success or accomplishment within a field (Maton, 2014). In Accounting, new knowledge originates from sophisticated commercial transactions which spur on the development of Accounting standards and appropriate legislation (Lubbe, 2012). This research proposes that the threshold concepts in the financial instruments module serve as a lens into knowledge practices in Accounting as they represent a basis of accomplishment within the discipline.

2.2 Threshold concepts

2.2.1 Introduction and definition

The TCF has attracted considerable attention in recent years across various academic disciplines such as Economics (Davies & Mangan, 2006) and Engineering (Knight, Callaghan, Baldock & Meyer, 2014). Threshold concepts originate from a national research project titled the 'Enhanced Teaching-Learning Project' (ETL) conducted in 2003 in the United Kingdom. This project scrutinised the features of robust teaching and learning surroundings in higher education (Cousin, 2006).

Threshold concepts are defined as "a portal, opening up a new and previously inaccessible way of thinking about something" (Meyer & Land, 2005:3). They assert that threshold concepts usher in a "transformed way of understanding or interpreting

or viewing something without which the learning cannot progress" with the knowledge construction process in a discipline (Meyer & Land, 2005:3). This transformation introduces different degrees of comprehension of integral concepts in a discipline. These new portals may initially represent a "troublesome way of thinking about something" (Meyer & Land, 2005:4). Cousin (2006:5) refers to threshold concepts as "jewels of the curriculum" as they might be beneficial in detecting components of the curriculum that require proficiency, thereby making expert knowledge explicit.

Threshold concepts are discipline specific as they illuminate particular principles that carry epistemological characteristics inherent in an academic discipline (Rodger et al., 2015). As a criticism, Rowbottom (2007) asserts that one cannot be absolutely certain that the threshold concepts identified in a discipline are, in fact, threshold concepts as the process of identification is relative.

The ability to acquire an understanding of a threshold concept illustrates that a student has demonstrated "mastery of a discipline" (Rodger et al., 2015). Walker (2013) states that this new-found mastery of a threshold concept enables students to problem-solve in a fashion identical to a scholar or discipline expert.

2.2.2 Characteristics

A threshold concept consists of five distinct characteristics that may assist in providing insight into the various transitions students encounter in the learning process. Following interviews and discussions with various disciplinary practitioners, Meyer and Land (2005) identified that for threshold concepts to exhibit the following characteristics, they are likely to be transformative, bounded, probably irreversible, integrative and possibly troublesome resulting in troublesome knowledge. The transformative characteristic of a threshold concept is the cornerstone from which the remaining four characteristics follow (Walker, 2013).

One primary criticism of threshold concepts is that these characteristics are vague in nature (Rowbottom, 2007) as evidenced by use of the words "probably irreversible…possibly troublesome". Modality refers to a degree of certainty expressed by an author within a text. The words 'possibly' and 'probably' indicate low modality, which may imply a lesser degree of certainty regarding the characteristics associated with threshold concepts.

First, threshold concepts are likely to be transformative as shifts in ontological and epistemological thinking within a discipline may occur (Nicola-Richmond, Pepin, Larkin & Taylor, 2018). The term 'ontology' refers to one's perception of reality, while 'epistemology' refers to the process of knowledge acquisition (Mack, 2010). Knight et al. (2014) suggest when students experience this transformation they are able to understand new concepts and solve a variety of problems. Davies (2012) states that this transformation refers to students' feeling of inclusion into a discipline. The transformation could result in a shift in students' identity, which reveals underlying issues of power and hierarchy (Davies & Mangan, 2006; Meyer & Land, 2005). In particular, power relationships may be scrutinised as the identification of threshold concepts could result in the perception that these concepts are viewed as the curriculum benchmark, which possibly signals a "colonising view of the curriculum" (Meyer & Land, 2005:16). Meyer and Land put forward that the transition to proficiency in a threshold concept "may be sudden or it may be protracted over a considerable period of time with the transition to understanding proving troublesome" (2003:1).

Second, threshold concepts are possibly bounded in nature as these concepts may only be present in specific disciplines. Cousin (2006:4) suggests that threshold concepts may serve as "disciplinary property", as these concepts carry specific meaning which highlights specific ways of "thinking and reasoning within a discipline" (Rodger et al., 2015:546). For example, the concept of a financial instrument carries specific epistemic connotations for an Accounting student in Financial Reporting II as this concept refers to financial assets, financial liabilities or equity instruments.

Third, a threshold concept is frequently irreversible. Meyer and Land (2005) claim that once a threshold concept has been mastered, it is unlikely that a student will forget the concept. King and Felten (2012) surmise that this is due to the array of affective and cognitive transitions students experience in attempting to master the threshold concepts.

Fourth, a threshold concept is integrative in nature due to its ability to illuminate how concepts link up to structure a more coherent understanding. Mastery of a threshold concept enhances a student's ability to identify the connections among concepts which previously appeared unrelated (Cousin, 2006).

Lastly, a threshold concept is troublesome and is likely to involve aspects of knowledge which is difficult to grasp. This characteristic may not present itself in every threshold concept but may appear frequently (Barradel & Kennedy-Jones, 2015). Perkins (1999), cited in Meyer and Land (2005:9), describes troublesome knowledge as “counter-intuitive or alien which emerges from a culture or discourse” or is conceptually challenging (Eckerdal, McCartney, Moström, Ratcliff & Sanders, 2006) as this may result in reconfiguration of prior understanding, learning or identity (Davies, 2012).

Perkins (1999), cited in Meyer and Land (2005), suggests that knowledge may be troublesome for varying reasons. Forms of troublesome knowledge include, “ritual, inert, conceptually difficult, alien, tacit knowledge and troublesome language” (Meyer & Land, 2003:6–11). Perkins (1999), cited in Meyer and Land (2003:7), refers to ritual knowledge as possessing “routine and rather meaningless character” where students are able to apply a concept but struggle to understand why the concept is applied. Inert knowledge refers to knowledge stored in one’s memory that is only accessed after direct instruction to do so. Conceptually difficult knowledge refers to a combination of “misimpressions and ritual knowledge” (Meyer & Land, 2003:8), which may be experienced as contradictory. Alien knowledge is described as foreign in nature, which may be in direct conflict with students’ perspectives or beliefs, while tacit knowledge refers to the implicit knowledge comprising subtle nuances among concepts that are only understood once you are a participant in a particular profession or group. Lastly, troublesome language could emerge when an academic discourse uses particular terminology in a certain context where these terms may be unfamiliar to individuals who are not immersed in the Discourse.

Another criticism from the research into threshold concepts (Barradel, 2013) is that if a student encounters a challenging concept, it becomes challenging to separate a concept and a threshold concept. Meyer and Land (2003:4) refer to a core concept as a “conceptual building block” that requires understanding but does not, as a direct consequence, result in an alternative view of the discipline or subject. In contrast, a threshold concept, once understood, has the potential to significantly alter perception of the discipline – this refers to the characteristic of transformation discussed above.

Meyer and Land (2005) indicate that in the process of learning, students may reside in a liminal state as they journey towards mastering a threshold concept (Cousin, 2006).

This liminal state may represent an “unstable space” (Cousin, 2006:4) where students move between prior and new ways of understanding but also signals that a student is moving towards mastery of the threshold concept. When students are in this liminal state, they may experience transformation through changes in identity, which could result in “troublesome and unsafe journeys” (Cousin, 2006:5).

2.2.3 Threshold concepts and constructivism

The TCF provides insight into unpacking the knowledge experienced as troublesome and/or transformed understanding and thinking encountered by students when exposed to the threshold concepts in financial instruments. From an educational development perspective, identifying the essential threshold concepts within a curriculum and making these explicit in the classroom may empower students’ understanding and ability to develop a “trained gaze” (Maton, 2014:116). A trained gaze refers to instances where actors’ insight into a field is acquired via extensive training in “specialized methods and procedures” (Maton & Moore, 2010:166). This research suggests that identification of the threshold concepts in financial instruments may assist students in developing part of this trained gaze as knowledge of a discipline is made more explicit. However, this trained gaze can only be mastered with practical experience.

It is apparent that the TCF is framed within a constructivist view of teaching and learning as the troublesome knowledge characteristic speaks to students’ learning experiences as they construct knowledge within a discipline. A constructivist view of teaching and learning emphasises that students develop knowledge through experience, so if this experience is troublesome and/or transformative in nature, this will influence the knowledge construction process.

2.2.4 Relevant research conducted in threshold concepts

The process of identifying threshold concepts has been described as complex but essential to make these critical concepts more explicit in the teaching-learning process (Barradell, 2013). One of the primary criticisms of threshold concept research is that research authors are not explicit in the methodology employed to identify threshold concepts (Quinlan, Male, Baillie, Stamboulis, Fill & Jaffer, 2013). A further methodological challenge arising from threshold concept research suggests that

corroborating whether a concept is threshold steers towards a positivist research approach (Quinlan et al., 2013).

Research conducted by Knight et al., (2014) attempted to identify threshold concepts in a third-year Engineering course using triangulation, with data collection clustered around teachers, students and assessment. Two teachers completed a concept map for the Engineering course and engaged in discussions to reach agreement on the threshold concepts. This stage of the data analysis moves towards a positivist approach to the identification of threshold concepts. Data collected from students included written reflections focusing on the troublesome knowledge experienced, one-hour focus group sessions and concept mapping. Analysis of assessment results formed the last component of the data triangulation to identify threshold concepts.

Research conducted in Educational Development (King & Felten, 2012) recommends that the TCF is useful in curriculum development to support altering pedagogy and including the student voice in changes in the teaching and learning paradigm. In Science Education, threshold concepts require identification as this would assist students to access “higher-order” learning (Stokes, King & Libarkin, 2018:436).

2.3 Legitimation Code Theory

LCT is located in the social realist paradigm which cumulatively builds on earlier work by Bernstein and Bourdieu (Maton, 2014). Using Bernstein’s code theory, research into knowledge structures and the pedagogic device, LCT moves these theories forward in a practical fashion (Maton, 2014). Bourdieu’s field theory and concepts around capital, habitus and field also form the foundation of LCT (Maton, 2014).

The notion of ‘cultural capital’ in Bourdieu’s field theory highlights how positions of actors within higher education are characterised via their knowledge and “know-how” within a discipline (Maton, 2014:34).

LCT comprises five dimensions serving as mechanisms to illuminate and decode languages of legitimation (knowledge practices) present in disciplines through knowledge structures. The five dimensions are Specialization, Semantics, Autonomy, Temporality and Density (Maton, 2014). In this literature review, an overview of Specialization and Semantics is provided as only these two dimensions are relevant for this research.

Maton introduces Specialization as “practices and beliefs are about or orientated towards something or by someone” (2014:29). Specialization focuses on the analysis of practices in education through epistemic relations and social relations (Maton, 2014). Epistemic relations refer to relations between knowledge practices and the object studied, while social relations refer to who can claim to be a “legitimate knower” (Maton 2014:29). These epistemic and social relations are displayed along a degree of continuum of strengths (weaker, stronger) (Figure 3) analysing whether organising principles or knowledge practices provide privilege to a knowledge code, a knower code, both codes or neither (Maton, 2014). Analysis of the principles or knowledge practices are ordered into four categories: knowledge code, knower code, relativist code and elite code.

Specialization builds on Bernstein’s (2000) research on classification and framing, continued via the Specialization codes through the knowledge or knower codes (Maton, 2014). Classification is concerned with the curriculum and degree of strength of boundaries in a discipline, while framing relates to pedagogy and the relationship between the teacher and learners in a classroom setting (Bernstein, 2000; Shay, 2008). Shay (2015) asserts that both a knowledge and a knower code will be present; what needs to be established is which of the codes is more privileged.

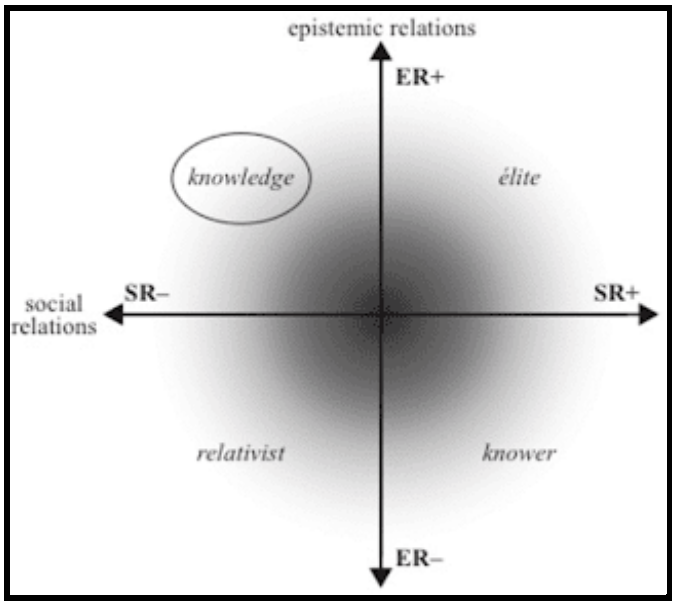


Figure 3: Specialization codes along a continuum (Maton, 2014:30)

The second dimension of LCT, Semantics, which comprises semantic gravity and semantic density, is presented along a continuum (Figure 4). Semantics is a

conceptual tool to analyse how knowledge is constructed over time and is concerned with existing knowledge in the higher education curriculum (Shay, 2013). The Semantics dimension is developed from the horizontal and hierarchical knowledge structures foregrounded by Bernstein (2000) (Maton, 2014). To shed light on knowledge practices in Accounting, the Semantics dimension is used in this research to explore whether semantic gravity and semantic density are stronger or weaker in the threshold concepts identified in the financial instruments module.

Semantic gravity is concerned with "external relations to knowledge practices" (Shay, 2013:568) and refers to "the degree to which meaning relates to context" (Maton, 2011:49), stronger or weaker along a spectrum. Maton (2014) argues that mastery of semantic gravity enables cumulative knowledge building as students are in a position to transfer knowledge across contexts. Maton states that semantic gravity could be assessed as stronger or weaker across six descriptions, namely, "abstraction, generalisation, judgement, interpretation, summarizing and reproductive description" (Maton, 2014:113).

He argues that these six descriptions do not represent the only way of assessing semantic gravity but that each body of research should develop a relevant tool to use semantic gravity. A brief overview of these descriptions is included below.

Abstraction refers to a general concept which exists beyond an object and addresses a larger practice. Generalisation points towards common observations or conclusions in reference to a particular event, while judgement is described as making sense of information while putting forward an opinion. Interpretation refers to describing information or including new information which may include an individual experience. The summarising description is concerned with "re-structuring" (Maton, 2014:113) and does not display new information beyond the object study, while the reproductive description refers to information directly with no further explanations.

Stronger semantic gravity (SG+) describes how meaning is anchored in the context in which it is used or acquired and illustrates a reproductive description. Weaker semantic gravity (SG-) indicates that meaning is de-contextualised; it navigates towards "generalisations and abstractions" (Maton, 2014:110) and is categorised as abstract as this refers to a general concept.

Semantic density is concerned with “internal relations to knowledge practices” (Shay, 2013: 568) and refers to how much meaning is contained within a word, phrase, concept or symbol, or extent of complexity (Maton, 2014). Shay (2013:571) states that semantic density refers to the “nature of the concept”. Stronger semantic density (SD+) indicates that significant meaning is anchored within practices while weaker semantic density (SD-) indicates that less meaning can be inferred from a concept or word (Maton, 2014).

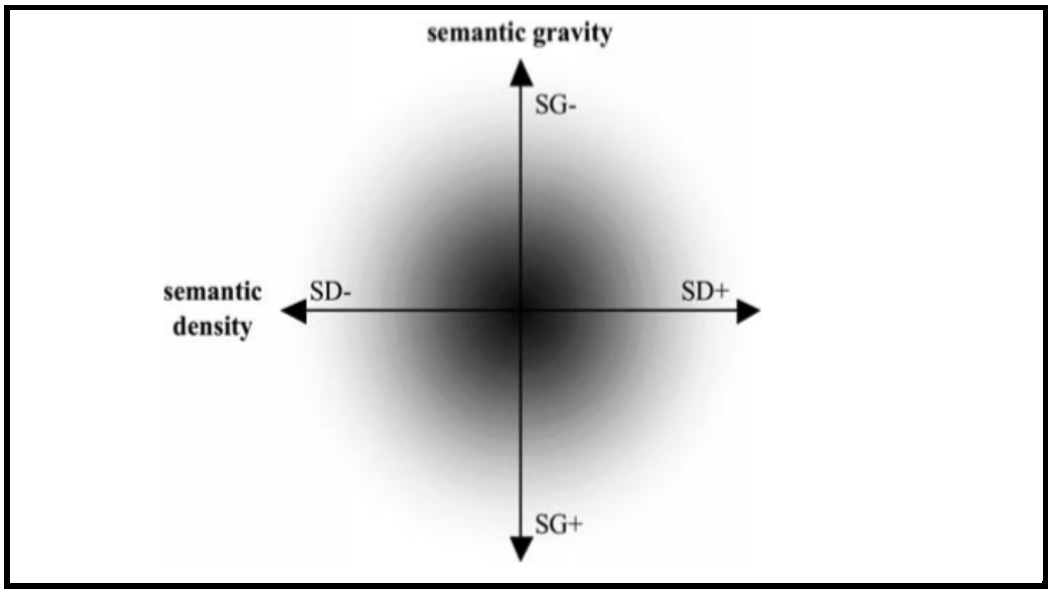


Figure 4: The semantic plane comprising semantic gravity (SG) and semantic density (SD) (Maton, 2014:131)

Semantics is relevant in this research as this dimension is used to provide insight into knowledge practices in Accounting by means of the threshold concepts identified in the financial instruments module.

2.3.1 Relevant research conducted using Semantics

Research conducted in the Chemistry Education field (Blackie, 2014) used the concept of *semantic waves* in Semantics to demonstrate how LCT can assist in exhibiting the knowledge which displays proficiency within a discipline. Using a single Chemistry concept titled ‘Grignard reaction’, Blackie (2014) proposed that Chemistry as a discipline possesses weaker semantic gravity and stronger semantic density owing to the abstract nature of the concepts and complexity of the terminology.

In an investigation into students' knowledge construction process in a first-year Accounting course with a more hierarchical knowledge structure, Myers (2017) utilised Semantics to illustrate how the concepts in an Accounting course possess a weaker semantic gravity due to the high degree of abstraction. Stronger semantic density presents itself as the concepts are imbued with discipline specific terminology which carries specific contextual meaning for an Accounting student. Myers (2017) referred to the example of 'depreciation' to demonstrate stronger semantic density inherent in this concept. Depreciation refers to the systematic allocation of an asset's depreciable amount over its estimated useful life. Myers (2017) pointed out that the concepts of depreciable amount *and* an asset's useful life would also require mastery for the concept of 'depreciation' to be understood. Interestingly, Meyer and Land (2005) proposed that the concept of depreciation is a threshold concept after consultations with Accounting professionals.

Clarence (2017) also used the dimension of Semantics to emphasise how lecturers should shift between conceptual and contextual facets within a discipline and how phrases or key terms enabled students to engage in cumulative knowledge building in an undergraduate Law course using a case study approach.

Lastly, research conducted in the curriculum reform sphere (Shay, 2013) utilised Semantics to analyse the higher education landscape through the lens of knowledge practices and plotted the facets of the curriculum along the semantic plane.

2.3.2 Language in Accounting studies

Semantics refers to the abstraction of disciplinary language and terminology, and the context to which meaning relates. Language in Accounting and its impact on student performance appears prominently in Accounting Education research (Van Wyk, 2011) and in the broader higher education sphere (Van Rooy & Coetzee-Van Rooy, 2015).

A study was conducted into the proficiency in English and the level of academic performance among final-year students registered for an Accounting or a Business degree in Somalia (Addow, Abubakar & Abukar, 2013). The study concluded that proficiency in English alone was not a determinant of students' academic success. The study did not investigate the other factors contributing to students' success. In contrast, a South African study investigating factors that may influence students' success in the

Initial Test of Competence (ITC) examination (Van Wyk, 2011), which is a professional examination, identified that a positive statistical relationship exists between passing the ITC and possessing English or Afrikaans as a first language. Afrikaans is one of South Africa's official languages, originating from Dutch. Students who listed English or Afrikaans as their first language had a pass rate of 65% in the ITC examination, while those who listed an alternate first language other than English or Afrikaans, had a success rate of only 53% at the time the study was done (Van Wyk, 2011:159). The material difference in pass rates illustrates the importance of language in Accounting and the broader higher education landscape.

2.4 Conclusion

This overview of the literature sheds light on the Threshold Concept Framework (Meyer & Land, 2005) and Legitimation Code Theory (Maton, 2014) which informs this research into threshold concepts and knowledge practices in Accounting. Research using these frameworks is included as they may be relevant to this study. The Threshold Concept Framework is used in two parts of this research. First, to identify the threshold concepts in the financial instruments module emerging from data collected from focus groups and an interview with a lecturer. Second, to explore whether African, Coloured and Indian students' exposure to the threshold concepts resulted in disciplinary knowledge being troublesome and/or a transformed way of thinking and understanding. Legitimation Code Theory is used via the Semantics dimension to provide insight into knowledge practices in Accounting by analysing the semantic gravity and semantic density as stronger or weaker in the threshold concepts identified.

CHAPTER 3 OVERVIEW OF THE ACCOUNTING DISCIPLINE

3.1 Background and framing of study

This chapter provides a contextual overview of the Accounting discipline and portrays the role of international and professional bodies in influencing knowledge practices in Accounting. In addition, the chapter describes the second-year Accounting course (Financial Reporting II) outcomes at UCT and provides insight into the student body registered for Financial Reporting II in 2018. Providing this background informs the interpretation of the results and findings in this research.

3.2 Knowledge practices of the Accounting discipline

This research uses a financial instruments module to identify threshold concepts which reveal knowledge practices in the specialised discipline of Accounting.

For knowledge practices in Accounting to be examined, an understanding of the elements that influence the broader landscape is required. Maton (2014:29) refers to knowledge structures as a "medium,…a language of legitimation" whereby success within a discipline is inextricably linked to these structures. Interrogation of knowledge structures as horizontal discourse or vertical discourse (Maton, 2014) provides a mechanism to analyse the intellectual field of Accounting. Horizontal discourse is referred to as "every day or common-sense knowledge" while vertical discourse is commonly referred to as "scholarly or professional knowledge" (Maton, 2014:68). This seminal research into knowledge structures is foregrounded by Bernstein (2000). International and professional Accounting bodies play a vital role in influencing knowledge structures and controlling knowledge practices in South Africa. The accreditation process of professional accounting programmes is conducted by the SAICA, which stipulates the necessary levels of professional and technical competencies of prospective Chartered Accountants of South Africa (CA(SA)) when entering the profession.

The International Financial Reporting Standards Foundation oversees the development and promotion of the International Financial Reporting Standards (IFRS) through the International Accounting Standards Board (IASB), which serves as the standard-setting body responsible for the development of a "single set of high quality,

understandable, enforceable and globally accepted Accounting standards" (IFRS website, 2019). These IFRS form an essential component of the Accounting discipline as the principles and practices contained therein govern how transactions are recorded, presented and disclosed in an entity's financial statements. IFRS and the IFRS for SMEs are the two sets of Accounting standards developed by the IASB.

The foundation of Accounting standards lies within the Conceptual Framework that outlines the purpose of financial statements, definitions, measurement and recognition criteria for assets, liability, income and expenses (International Accounting Standards Plus website, 2019). In Accounting, recognition refers to a transaction that should be included in the accounting records while measurement is concerned with determining the monetary value of the transaction recognised. The language and terminology used in Accounting standards are specialised and conceptually dense.

These Accounting standards, developed by the IASB, are internationally recognised and form the bedrock of the knowledge structures and practices in Accounting. Companies listed on public stock exchanges are legally required to publish financial statements in accordance with "agreed Accounting standards" (IFRS website, 2019). In the South African reporting context, compliance with the IFRS or the IFRS for SMEs is a Companies Act (2008) requirement (per s29(1a)) for the preparation and presentation of financial information in an entity's financial statements. As Accounting standards are developed outside of the university arena by professional bodies like the IFRS Foundation, the site of new knowledge production does not occur within the university arena but rather resides with professional bodies or commercial practice due to the sophisticated nature of transactions in the global economic environment (Lubbe, 2012).

Knowledge practices that emerge from the official Accounting standards are inextricably tied to the principles and practices the IFRS Foundation deem imperative for the Accounting profession. This authority enforced by the IFRS Foundation around knowledge practices provides a perspective into Accounting knowledge structures. This research argues that the type of cultural capital actors need to possess to ascribe to the basis of achievement in Accounting is dictated and influenced by Accounting standards rather than actors' experience, practices and beliefs. Cultural capital (Bourdieu, 1986) is described as "high status cultural signals used in cultural and social

selection" (Lamont & Lareau, 1988:153). This research suggests that the threshold concepts identified are indicative of a type of cultural capital valued in Accounting.

Prior research into knowledge structures in a first-year Accounting course at a South African university (Myers, 2016) concluded that Accounting is representative of a vertical discourse structure which is more hierarchical in structure. A hierarchical knowledge structure comprises a "coherent, explicit and systematically principled structure" (Bernstein, 2000:157). The principles and concepts contained in the Conceptual Framework and the IFRS serve as the foundation for this hierarchical knowledge structure (Myers, 2016).

In South Africa, professional Accounting degrees in higher education are accredited by the SAICA due to the mandate extended by the Centre for Higher Education for SAICA to exercise a role as an Education and Training Quality Assurer. SAICA is a professional Accounting body accredited by the Independent Regulatory Board for Auditors (SAICA Competency Framework, 2016). For Accounting degrees to be accredited, SAICA conducts regular quality assurance inspections at higher education institutions as a result of which successful graduates from these programmes may register to write the ITC (SAICA, website, 2019). The ITC is a professional examination that assesses whether candidates have the required core competence before the commencement of a professional programme (SAICA Competency Framework, 2016).

The ITC is written after the successful completion of an accredited CTA programme[2]. As at May 2019, 20 higher education institutions offered undergraduate and/or postgraduate accounting programmes that were accredited by the SAICA (SAICA website, 2019). The accreditation process, however, has been highly criticised in several studies (Boyle, Carpenter, Hermanson & Mero, 2015; Ellington & Williams, 2017). Research conducted by Boyle et al. (2015) shows that professional bodies assert their influence in higher education faculties by emphasising importance of industry experience. In the United Kingdom, Ellington and Williams (2017) suggest the accreditation process heavily impacts student recruitment and degree programmes

[2] 'CTA' refers to a Certificate in the Theory of Accounting which is offered as a post-graduate qualification in South African higher education institutions.

adhere strictly to the content examined in professional examinations rather than a more comprehensive curriculum.

In South Africa, Venter and De Villiers (2013) argue that the accreditation process results in an Accounting curriculum and pedagogy that is closely aligned to the SAICA's Competency Framework. This argument is consistent with Maton's view that "knowledge practices are anything but neutral" (Maton, 2014:13) and findings from the research conducted by Ellington and Williams (2017).

The Competency Framework authored and regulated by the SAICA outlines the necessary attributes a Chartered Accountant is required to demonstrate on entering the Accounting profession (Competency Framework, 2016). The Competency Framework consists of two broad categories, pervasive skills and qualities, and specific competencies, which refer to subject-specific proficiencies students are required to demonstrate at different levels. Currently, the SAICA is revisiting the Competency Framework through an elaborate reinvention entitled 'CA 2025', which aims to pinpoint new challenges emerging from the fourth industrial revolution (SAICA website, 2019). The SAICA asserts that the project is necessary due to the changing landscape of the global business context and that use of technology prompts reinvention of the competencies required by Chartered Accountants.

In Accounting, the current Competency Framework indicates that the academic programme at higher education institutions in South Africa is "principally concerned with the International Financial Reporting Standards" (SAICA Competency Framework, 2016:73). Given this focus, this research argues that Accounting is representative of an "intellectual discipline" where expert or "specialised knowledge" (Maton, 2014:32) serves as legitimate text and knowledge in accordance with the Accounting standards and the IFRS.

3.3 Financial Reporting at UCT

This section provides an overview of the design and position of the Financial Reporting II course at UCT, the course objectives in the context of the Accounting degree programme and the perception of this course from an institutional perspective as seen in the UCT Annual Report (2017).

Financial Reporting II, a second-year Accounting course, is an introduction to the technical knowledge and expertise required in professional accountancy; it occurs over a full academic year split over two semesters. The course forms part of a three- or four-year undergraduate Accounting degree at UCT. In contrast to other courses students register for, Financial Reporting II is the first course students engage with that is not a semester course but covers an entire academic year. Most of the students registered for this course are studying towards the professional CA(SA) qualification, which is the professional designation awarded by the SAICA.

The course has four core objectives. The first is to develop students' understanding of the application of fundamental financial reporting principles using the IFRS for SMEs as the reporting framework. Second, the course aims to build on students' existing knowledge garnered from two first-year Accounting courses (Financial Accounting I and Financial Reporting I), which are an introduction to the reporting frameworks. The third is to assist in developing students' awareness of the local and international business environment and the Accounting profession. Lastly, the course aims to grow students' "analytical and communication skills" as described in the Competency Framework (Financial Reporting II course document 2018:2). In reference to the second course objective, cumulative knowledge building is commonly associated with a knowledge structure that is more hierarchical (Myers, 2017). The financial instruments module forms part of the Financial Reporting II syllabus and signals the first time that Accounting students engage with this topic in their undergraduate studies.

It is apparent from the course objectives that the IFRS for SMEs serves as the single prescribed or official text that informs knowledge practices in Financial Reporting II. The importance of the IFRS for SMEs as a reference is evident through the assessment practice as students write open-book tests and examinations where the IFRS for SMEs can be consulted during summative assessments. This practice is consistent with the ITC, which is also described as an 'open-book assessment' (Lamprecht, 2013) where prescribed legislation (Taxation), IFRS and International Auditing Standards can be utilised. This open book approach as an assessment technique in the ITC increases the likelihood that students engage in the higher-order critical thinking through applying knowledge via examples as opposed to rote learning and memorisation (Mohanan, 1997) specifically if the assessment requires an

application of knowledge to real-life examples (Rowlands & Forsyth, 2006). In addition, in the context of graduate attributes, students are required to develop meta-cognitive skills pertaining to analytical thinking and communication (Hesketh, 2011). Importantly, three of the five threshold concepts identified in financial instruments (TC1, TC2 and TC5) as part of this research are inextricably linked to the IFRS. An overview of the threshold concepts identified is provided in section 3.5.

From an institutional perspective, Financial Reporting II (ACC2012W) is the only Commerce Faculty course to be included in the key performance indicators (KPI) as seen in the UCT Annual Report (2017). A KPI is defined as a quantitative mechanism to evaluate and demonstrate how effectively an organisation is realising its outcomes (Kipfolio website, 2019). The KPI target relevant to this research indicates that Financial Reporting II is listed as a KPI with the description "*Improve success rates in Accounting 2012W"* (UCT Annual Report, 2017:45). In summary, the presence of Financial Reporting II as a KPI demonstrates the relevance of this course in UCT's broader institutional goals.

With this background into the Accounting discipline and the role of professional bodies in mind, this chapter now analyses the cohort of students who registered for Financial Reporting II in 2018 at UCT. This is necessary as this research explores whether exposure to the threshold concepts in the financial instruments module results in disciplinary knowledge experienced as troublesome and/or a transformed understanding and thinking being experienced by ACI students.

3.4 Who are the students?

A brief overview of the student body at UCT from an institutional perspective and a summary of the student cohort registered for Financial Reporting II in 2018 is now provided. Consideration of the student profile from an institutional perspective is pertinent as an analysis from a qualitative or a quantitative perspective in the higher education landscape can only be useful if an outline of the contextual facets of the student body are considered. The national student activism between 2015 and 2017 indicates the need for critical reflection of the concerns raised by the UCT student body. Three key concerns around institutional culture emerged from the UCT student body during the 2015–2017 period of activism. The first, decolonisation of the university,

second, fee-free education and third, the insourcing of workers who were previously part of outsourced service (UCT Teaching and Learning Report, 2017).

For this research, the most recent data from which a student body context is provided is based on the UCT Teaching and Learning Report for Senate for the 2017 academic year, which was released in November 2018.

In the 2017 academic year, 28 724 students (17 872 undergraduates, 10 852 postgraduates) were enrolled at UCT. Self-declared South African Black, Coloured and Indian students comprised 45% whereas self-declared White students comprised 25% of the total enrolment at the university. Students electing not to declare their race category comprised 13%. The report does mention which group of students comprise the remaining 17% of the total student body. The Faculty of Commerce has the highest student enrolments at the university with 7 144 students, representing 24.9% at an institutional level (UCT Teaching and Learning Report, 2017:11–12).

In summary, at an institutional level, the majority of UCT students are either African Black, Coloured or Indian and are registered for undergraduate rather than post-graduate studies. The largest student enrolment is concentrated in the Commerce Faculty for undergraduate degrees. This student profile demonstrates the relevance of this research as ACI students comprise the majority of the student cohort at UCT.

Having provided an overview of the student profile at an institutional level, this study now focuses on the student cohort registered for Financial Reporting II in 2018. Table 1 summarises the student body in terms of race and English as a first language.

Table 1: Summary of student cohort registered for Financial Reporting II in 2018 at UCT per racial demographics and language (Financial Reporting II Course Evaluation, 2018)

	EDU	**Mainstream**	**Total**
Total number of students registered (2018)	198	518	716
Separated into:			
ACI	189	218	407
White	-	189	189
Chinese	1	10	11
Other	8	101	109
First language – English	85 (43%)	404 (78%)	489 (68%)

The high enrolment among ACI students in the EDU for Financial Reporting II is in accordance with the programme's equity aims which are to provide holistic support to ACI students when entering UCT.

It is evident that Table 1's most distinguishing factor between Mainstream and EDU students is their first language. Many EDU students speak a home language that is not English. 'First language' in this research refers to the language students use daily; it is also referred to as students' 'home language'. Research conducted around determinants of student performance in the undergraduate Accounting degree programme by Jansen and de Villiers (2016) claims that the impact of students learning Accounting in their first language has been a point of debate for many years. Many South African universities list English as the primary language of instruction and assessment, with a few universities also allowing Afrikaans as an option.

The misalignment in relation to language within the broader South African population is apparent. South Africa has eleven official languages, with 22.7% of South Africans citing Zulu as their home-language, followed by 16.0% citing Xhosa and 9.6% citing English (Census 2011). In Accounting, research conducted by Van Wyk (2011) identified that a positive relationship exists between students listing English as a first language and success in the ITC examination. ITC candidates who listed English or Afrikaans as their first language had a success rate of 65%, whereas candidates with a first language other than English or Afrikaans had a success rate of only 53% (Van Wyk, 2011).

Particular attention will be directed to language in this research as this is deemed a determinant in knowledge experienced as troublesome in the mastery of threshold concepts through troublesome language. However, other characteristics may contribute to the troublesome knowledge experience, for example a poor schooling system or first-generation entry into higher education by students, to name two (Pym & Paxton, 2013).

3.5 Overview of the threshold concepts identified in financial instruments

One of this research's objectives is to identify, by way of the TCF, the threshold concepts inherent in the financial instruments module using the Financial Reporting II

syllabus as a frame of reference. This objective is a critical feature of this research as these threshold concepts seek to explicate knowledge practices in Accounting. A brief overview of the threshold concepts identified in financial instruments follows.

The IFRS for SMEs reporting framework is the focus for this research, particularly Section 11: *Basic Financial Instruments* and Section 22: *Liabilities and Equity*. These two sections include the Accounting and reporting principles underpinning financial instruments. Financial instruments refer to assets, equities or liabilities that are capable of being purchased or sold between parties. Financial instruments may take the form of cash, ownership interest or a contractual obligation to pay or receive an alternate type of financial instrument (Lubbe, Modack & Herbert, 2019). The IFRS for SMEs defines financial instruments as “a contract that gives rise to a financial asset of one entity and a financial liability or equity of another entity” (IFRS for SMEs, 2015:55).

Students are required to comprehend and apply this definition to identify whether a transaction contains a financial instrument and following from this, to classify the type of financial instrument as a financial asset, financial liability or equity. This module is taught in the second semester of the academic year and is spread over eight lectures over a two-week period. There are two matters where the accounting treatment of financial instruments is different between IFRS for SMEs and IFRS. First, a definition and description of an entity’s *business model*, which refers to the intention behind the business holding a portfolio of financial assets (PWC Guidance paper, 2018) is included in IFRS but not mentioned in IFRS for SMEs. This intention dictates whether the financial asset is measured at fair value through profit or loss, or at fair value through other comprehensive income. Second, the measurement of a financial asset at fair value through other comprehensive income is an allowed option in IFRS, while IFRS for SMEs does not provide for this option. It is interesting to note that some students interviewed in this research identified these deviations as presenting disciplinary knowledge being troublesome. Expansion on this troublesome knowledge experienced can be found in Chapter 5 – *Results and Findings*.

The decision to include the two matters relating to the accounting treatment of financial instruments in accordance with IFRS, thus resulting in a slight deviation from IFRS for SMEs, is motivated by two concerns. First, the complexity of the various measurement models available for financial assets and the concept of understanding an entity’s

business model are introduced before students encounter IFRS 9 *Financial Instruments* in post-graduate Accounting courses. Second, introducing students to the dense and complex terminology in Accounting standards at an earlier stage may increase their awareness and understanding of these terms. It may also help students understand the application of the recognition and measurement principles of financial instruments. It is important to note that the basic application of an entity's business model has been identified as a threshold concept (TC2) in this research, hence the need to elaborate on the deviation. From a language perspective, the five threshold concepts (TC1–5) identified in this research are conceptually dense, specialised and abstract. This requires a certain level of prior knowledge for these concepts to be applied.

The five threshold concepts (TC1–5) present in the financial instruments module identified in this research are as follows:

1 The meaning of a 'financial instrument' as a concept (TC1).

2 Understanding the business model of an entity in the context of decisions relating to financial instruments (TC2).

3 The time value of money (TVM) principles[3] (TC3).

4 The recognition and measurement of financial instruments (TC4).

5 Identifying the type of financial instrument (TC5).

Threshold concepts one to four (TC1–4) were identified in stages one and two of the data collection through focus groups conducted with the assistant lecturers and an interview with an Accounting lecturer. Threshold concept five (TC5) was identified by the subject expert after reviewing the data coding in stages one and two. The process of identifying the threshold concepts is explained in Chapter 4 – *Research Methodology* and in Chapter 5 – *Results and findings*.

[3] Time value of money' is a concept that explains that cash available at the present moment is worth more than the amount in a future period due to economic benefit that may be earned or incurred from interest (Investopedia).

3.6 Conclusion

This chapter provided a background to the discipline of Accounting by illustrating the sources of legitimate texts in Accounting. An explanation of the role of the International Accounting Standards Board and the South African Institute of Chartered Accountants in moulding and dictating the knowledge practices that serve as a basis of success in the Accounting profession in South Africa was also explored. A brief outline of the threshold concepts in financial instruments provides a basis to further examine the knowledge practices inherent in Accounting. This is further illuminated using the dimension of Semantics in Legitimation Code Theory (Maton, 2014), which is discussed in more detail in Chapter 2 – *Literature review*. Lastly, describing the student body from an institutional perspective is a critical component. Against this social backdrop, an exploration into whether exposure to the threshold concepts in the financial instruments resulted in troublesome knowledge and/or a transformed way of thinking and understanding experienced by African, Coloured and Indian students are established.

CHAPTER 4 RESEARCH DESIGN AND METHODOLOGY

4.1 Research scope and rationale

This chapter details the research methodology adopted for this qualitative study which explores Accounting knowledge practices using the TCF and LCT.

The discussion commences with an outline of the research design, the process of data collection and analysis to answer the research questions. An outline of the sample population and selection is also included. Consideration of ethical matters and an assessment of reliability and validity related to this research are also considered.

The research context is a South African residential university (UCT). The site of the research is the Accounting department (College of Accounting) and students registered for a second-year Accounting course (Financial Reporting II) in 2018.

Ethical clearance for this research was obtained in June 2018 from the School of Education Research Ethics Committee at UCT (Appendix E); no ethical issues were noted. Ethical considerations are discussed in section 4.5 of this chapter.

4.2 Research design

This section provides a summary of the five-stage data collection process followed to answer the research questions posed in this study.

Stages one and two identified threshold concepts in the financial instruments module by analysing key terms and themes in responses obtained from assistant lecturers in focus groups and an interview with an Accounting lecturer using, In Vivo coding. Establishing key terms or themes based on participants' responses lends itself to In Vivo Coding or a qualitative line of inquiry (Saldana, 2013). Stage three consisted of a distribution of a general survey that focused on assessing students' initial understanding of the threshold concepts and purposefully selected ACI students (hereon referred to as 'student participants') for data collection stage four. In stage four, semi-structured interviews were conducted with student participants to explore whether the exposure to the threshold concepts in the financial instruments module resulted in the emergence of knowledge which is troublesome and/or a transformed understanding.

Lastly, stage five consisted of the analysis of the data collected from student participants' objective tests. A summary of the data collection process and the purpose of each stage is illustrated in Figure 5 below.

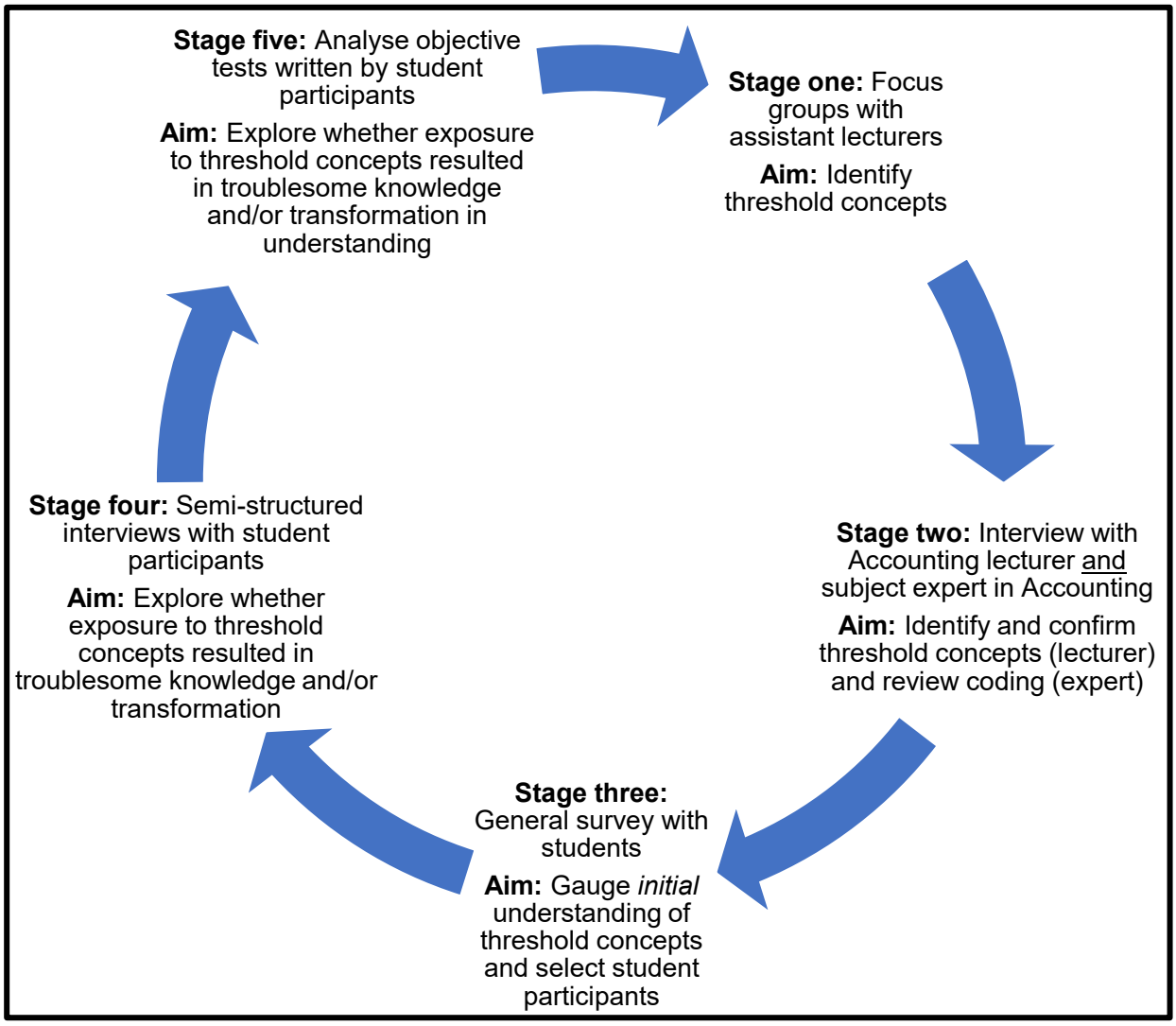


Figure 5: A graphic representation of the data collection stages and related aims

Given the multiple data collection points, triangulation of data from stages one, two and four enhanced the authenticity and consistency of the data emerging from this qualitative research into establishing the threshold concepts in financial instruments. Key themes and terms were analysed to assess whether there was commonality in threshold concepts identified by the focus groups and the lecturer and to determine whether the disciplinary knowledge experienced as troublesome and/or a transformed understanding by student participants was anchored in the threshold concepts identified.

4.3 Population and sample selection

This section describes the population and the sample selection method applied for each of the five data collection stages in this research.

Stage one: Focus groups

The population for the focus groups consisted of assistant lecturers who formed part of the Financial Reporting section in 2018 in the College of Accounting at UCT and any assistant lecturers who previously tutored Financial Reporting II in their capacity as a student tutor in 2017. Nine assistant lecturers were contacted for voluntary participation and eight participated.

Assistant lecturers possess the relevant expertise and mastery to identify the threshold concepts in this research as they are graduates who have completed their post-graduate Accounting studies. At the time of this research, the eight assistant lecturers had passed the ITC. Assistant lecturers were contacted as they approximately three years older than the students registered for Financial Reporting II in 2018 and were closer to the student experience having completed their post-graduate studies in 2017. This duality in technical competency and proximity to the student experience allows for meaningful contribution in identifying the threshold concepts.

Stage two: Semi-structured interview with Accounting lecturer and Accounting subject expert

The semi-structured interview with the lecturer was necessary as he was deemed a knower in the field due to his qualification as a CA(SA). His prior expertise in teaching financial instruments provided an expert lens in identifying threshold concepts. In LCT a ‘knower’ is someone who is deemed an expert in the field (Maton, 2014).

A second interview with a subject expert in Accounting, a qualified CA(SA), focused on reviewing the coding of the focus groups and the interview with the Accounting lecturer, as this data was used to identify the threshold concepts in the financial instruments module.

Stage three: General survey

Students registered for the Financial Reporting II course in 2018 were invited to participate in a general survey completed online using a 'Google Docs' form. A total of 716 students registered for Financial Reporting in 2018 and 181 students completed the survey. The survey was accessible for 24 hours and no access to the survey was allowed once the lectures on financial instruments commenced. The low participation rate did not impact the general survey's two associated aims. This is discussed in section 4.4.3.

Stage four: Semi-structured interviews with student participants

Purposeful sampling criteria were applied to select student participants as this enhances the ability for a comparison among their responses (Wengraf, 2001). Based on the sample criteria, ten potential student participants were contacted within three months of the general survey being completed online. Participation was voluntary. Seven students participated, of which three were Mainstream students and four were EDU students.

Purposeful selection was used for several reasons. First, students who selected the race category of 'African' 'Coloured' or 'Indian' were purposefully selected as student participants. The reasons for this criterion being used in the research are twofold. First, ACI students formed the majority of the student cohort registered for Financial Reporting II at the time of this research, and second, it was to focus on whether students' primary Discourse influences the troublesome knowledge student participants experience. Using language as a determining factor provides insight into whether student participants' language influenced the knowledge experienced as troublesome as this may also include troublesome language (Meyer & Land, 2003).

Identifying the type of financial instrument through the terminology associated with financial instruments was identified as a threshold concept (TC5), hence the need to include language as a factor in the sample selection process. This is supported by research conducted among South African graduates writing the ITC examination (Van Wyk, 2011) which identified language was a determining factor in student success.

Second, students' results from two objective tests were utilised as a basis for selecting student participants. On analysing the objective test results, the research attempted to

identify student participants who (1) performed poorly across both objective tests (less than 50%), (2) passed the first objective test (Appendix I) but failed the second objective test (Appendix J) or (3) had an average percentage that remained relatively consistent across both objective tests.

It is important to note that potential student participants who met the first two criteria listed above but did not write both objective tests were excluded from the sample selection. It was imperative that the research gauged students' troublesome knowledge and/or transformation experienced across *both* the objective tests as this provided more data for analysis to enhance the study's validity. Only students who agreed that their objective test results may be used for research purposes were included as potential student participants.

Lastly, including EDU and Mainstream students in the student participant selection was important as these two groups represent the full cohort of students registered for Financial Reporting II in 2018 and it therefore supports a comparison among students' troublesome knowledge and/or a transformed way of thinking being experienced. Distinguishing between the EDU and Mainstream groups through the purposeful sample selection helped identify whether students' primary Discourse influenced the knowledge experienced as troublesome.

Stage five: Objective tests

The objective tests were summative assessments marked by postgraduate student tutors, which were written in a formal tutorial setting. In Financial Reporting II, tutorials are held each week with each tutorial group comprising 20 to 25 students. On average, 600 students write objective tests each week in Financial Reporting II. In this research, one objective test was written each week for two weeks which assessed students' application of the five threshold concepts identified in the financial instruments module. In this research, the seven student participants' objective test answers were obtained and analysed as per the process described in section 4.4.3.

4.4 Data collection and analysis

This section describes the processes for the data collection and analysis to answer the three research questions.

4.4.1 Data collection and analysis to identify threshold concepts

Stage one of the data collection commenced with three focus groups conducted with eight assistant lecturers; stage two focused on one interview conducted with an Accounting lecturer to identify the threshold concepts in the financial instruments module. Stages one and two achieved part of the triangulation to prove reliability and validity in this research. To further enhance the validity of this research, one interview was conducted with a subject expert to review the coding of the threshold concepts identified. Issues of validity, reliability and bias are considered in section 4.5 of this chapter.

Use of focus groups

The literature suggests that using focus groups allows for "cross-fertilisation of ideas within an interactive group setting" (Rodger et al., 2015:548) and enhances the likelihood that participants will express their views unreservedly. A common activity in the identification of threshold concepts is dialogue among lecturers and students (Barradell, 2013). Focus groups were limited to three participants per group to enhance the likelihood of dialogue among participants.

The decision to choose assistant lecturers stems from the belief that as a collective, assistant lecturers have insight into the student experience due to their undergraduate and postgraduate studies in Accounting. As a result, assistant lecturers possess a degree of mastery associated with lecturers. The decision to focus on assistant lecturers' perspectives on threshold concepts follows the approach by Davies and Mangan (2006) where researchers initiated the identification of threshold concepts in Economics through conversations with lecturers and students.

Three separate focus groups were held and the basic structure of each focus group was identical. The focus group commenced with the researcher requesting signed permission for audio recordings to be made and transcribed and for focus group participants' written and verbal responses to be used for research purposes. Following this, a document (Appendix A) containing explanations of literature on threshold concepts was provided to each focus group participant. The researcher read through this document with the focus group participants and invited any questions if further clarity was required. The document included the definition of a threshold concept and

explanations of two characteristics of troublesome knowledge and transformation. The decision to foreground the definition of a threshold concept together with the characteristics of troublesome knowledge and transformation was deliberate due to the nature of the research questions posed (see section 1.5).

The researcher provided each focus group participant with a questionnaire comprising three questions (see below), copies of the IFRS for SMEs handbook and the financial instrument notes available to Financial Reporting II students in 2018 should the focus group participants voluntarily elect to use the handbooks and notes as a frame of reference. Focus group participants had 15 to 20 minutes to write down their responses to the questions posed in the questionnaire. The researcher, guided by literature which explores the notion that focus groups allow for more productive conversation among participants (Quinlan et al., 2013; Knight et.al., 2014), requested a debrief exercise. The debrief session facilitated engagement as focus group participants' responses were shared and some common threshold concepts among participants emerged.

Focus group participants were not required to answer the questions in any order and no objections to the debrief component of the focus group were noted. The researcher provided the opportunity for focus group participants to direct any questions about the research to the researcher. Thereafter, the questionnaires were collected and the focus group ended. The average duration of each focus group was 40 minutes. The following three questions were presented to the focus groups (see Appendix A):

Questionnaire presented to the focus groups:

1 Identify the threshold concepts in financial instruments using the IFRS for SMEs as the reporting framework and the Financial Reporting II syllabus as a frame of reference.

2 Considering your answer to the question above, please explain the troublesome knowledge you encountered in financial instruments when you were enrolled for Financial Reporting II as a student?

3 Considering your answer to the threshold concepts you identified in financial instruments, please explain which of the threshold concepts you identified as transformative to you?

The data collected from the focus groups formed the first stage in the data collection (Figure 5). The two remaining stages of the data collection comprise responses from a lecturer and student participants registered for Financial Reporting II in 2018.

To identify the five threshold concepts, each of the eight assistant lecturers' written responses to question 1 in the questionnaire and their verbal responses in the debrief component were analysed. Answers to questions 2 and 3 were analysed if additional context was required. Using In Vivo coding, each participant's answer to question 1 was analysed to identify brief expressions, key terms or concepts. In Vivo coding enhances the likelihood that the analysis of the written responses remains rooted in the participants' responses (Saldana, 2013). Where applicable, extracts from the debrief component of the focus group were included to highlight important considerations in identifying the threshold concepts.

Results of the analysis of key terms, concepts or themes emerging from participants written responses to question 1 were transposed onto an MS Excel matrix. Each focus group participant was given a participant label (A, B, C etc.) in the matrix. The matrix was designed to identify each assistant lecturer's written response to the question "*Identify the threshold concepts in financial instruments using the IFRS for SMEs as the reporting framework and the Financial Reporting II syllabus as a frame of reference*". The matrix enabled the data to be coded and organised in a methodical fashion which permitted categorisation of key terms, phrases or concepts (Saldana, 2013). Organising the responses into themes enabled the researcher to gauge the frequency of the key terms or concepts in the focus group participants' responses. Categorising and grouping these key terms, phrases or concepts was an important point of departure as the analysis and determination of the threshold concepts could only commence once this initial categorisation had taken place. Saldana (2013:9) states that the categorisation makes it possible to identify similar patterns and group responses into "families" as they share a common characteristic.

It is important to note that focus group participants were not required to establish or communicate why their selection was deemed a threshold concept. This decision was prompted by research conducted into the methodological challenges arising from research into threshold concepts (Quinlan et al., 2013), which assessed that

corroborating whether a concept was a threshold concept or not steers towards a positivist approach to research.

Audio recordings obtained from the focus groups were transcribed and written data from questionnaires was collected from the three focus groups.

Interview with Accounting lecturer

Stage two of the data collection process commenced with an interview with the Accounting lecturer who was a CA(SA) with four years of experience lecturing the financial instruments module in Financial Reporting II at the time of the research. The interview began with the researcher requesting signed permission for an audio recording to be made and for the lecturer's written and verbal responses to be used for research purposes. Following this, a document (Appendix B) comprising explanations of threshold concept literature was provided and the researcher read through this document with the lecturer and invited any questions if further clarity was required. The document included the definition of a threshold concept and explanations of two characteristics troublesome knowledge and transformation.

Questionnaire presented to the Accounting lecturer (Appendix B):

1 Identify the threshold concepts in financial instruments using the IFRS for SMEs as the reporting framework *and* the Financial Reporting II syllabus for financial instruments as a frame of reference.

2 Are there any concepts in financial instruments (using the IFRS for SMEs as the reporting framework *and* the Financial Reporting II syllabus) that you find challenging or difficult to teach to students? Why?

3 In light of your answer to (1) above, please explain which of the threshold concepts you identified you would assess as being transformative.

The lecturer's written responses to question 1 and verbal responses were analysed using In Vivo coding to identify brief expressions, key terms or concepts to identify the threshold concepts. Written answers to question 2 and 3 were analysed if additional context was required. The results were incorporated into the same MS Excel matrix that analysed the assistant lecturers' data.

Review of coding by subject expert in Accounting

To enhance the validity and rigour of the study, an Accounting subject expert at UCT was approached to review the identification and coding of the threshold concepts undertaken by the researcher. The data collected in stages one and two and the coding were provided for review. The expert had no prior knowledge of the data collected not having participated in any of the data collection phases.

4.4.2 Data collection and analysis to determine the degree semantic gravity and semantic density

The threshold concepts identified during stages one and two of the data collection were analysed using the LCT dimension of Semantics. Due to these concepts being so integrated, the semantic gravity and semantic density of the five threshold concepts were assessed collectively rather than individually.

To analyse whether semantic gravity was stronger or weaker in the threshold concepts, the extent of "abstraction, generalisation, judgement, interpretation, summarizing and reproductive description" (Maton, 2014: 113) was determined. The analysis started by considering whether weaker semantic gravity prevailed by analysing whether one of the threshold concepts (TC1) represented general principles where understanding is contingent on proficiency in prior concepts learned (Blackie, 2014). The remaining five descriptions in semantic gravity (see section 2.3) were considered if the analysis showed that the threshold concepts did not possess weaker semantic gravity.

To analyse whether semantic density was stronger or weaker, key terms and concepts inherent in the threshold concepts (TC1 and TC2) were extracted and analysed. Semantic density is stronger when meaning is entrenched and contingent on the financial instruments module, while weaker semantic density illustrates that meaning is not dependent on the context in which the key terms appear.

4.4.3 Data collection and analysis to explore troublesome knowledge and/or transformation experienced

To explore whether exposure to the threshold concepts in financial instruments resulted in troublesome knowledge and/or transformation being experienced by the

student participants data collected from a general survey, in interview transcripts and in objective tests written by student participants were analysed, as described below.

Stage three of the data collection was a general survey of students registered for Financial Reporting II in 2018. The general survey (Appendix C) was presented in a multiple-choice format and separated into two parts. 'Part A' focused on general questions about the student pertaining to home language and ethnicity and 'Part B' focused on students' understanding of the threshold concepts identified in stages one and two of the data collection. The general survey had two aims. First, the general survey was conducted prior to the teaching of financial instruments in lectures as it was imperative that the research was able to gauge students initial understanding of the threshold concepts identified before the content was covered in lectures. Second, the general survey sought to identify potential student participants who would be willing to participate in a semi-structured interview.

Stage four of the data collection commenced with semi-structured interviews with seven student participants. Student participants were invited to take part in interviews three months after the financial instruments module was lectured. The interview began with the researcher elaborating on the purpose of the research, requesting signed permission for an audio recording of the interview to be made and for this to be used for research purposes. Following this, a document comprising explanations of the meaning of threshold concepts was provided and the researcher read through this document and invited any questions if further clarity was required. The document included the definition of a threshold concept and explanations of two characteristics of troublesome knowledge and transformation. None of the student participants was informed of the threshold concepts identified in stages one and two of the data collection. Student participants were specifically asked to relay instances where disciplinary knowledge experienced as troublesome and/or a transformed way of thinking and understanding had been experienced when exposed to the threshold concepts. These responses were transcribed by an external party, analysed, colour-coded, grouped using In Vivo coding and linked to the threshold concepts identified.

Troublesome knowledge

As discussed above, stage four of the data collection process focused on semi-structured interviews which sought to establish whether exposure to threshold

concepts in the financial instruments module resulted in student participants experiencing troublesome knowledge. The interview process and analysis of the responses are articulated in the section above. Student participants were specifically asked to relay instances where knowledge experienced as troublesome had been encountered in the financial instruments module. Consideration of whether student participants' primary Discourse influenced the troublesome knowledge was also evaluated through the following question posed in the interview, "*Of the things that you found to be troublesome or challenging, do you think that your home life contributed to this?*". Further consideration was given to the type of troublesome knowledge experienced based on the interview extracts included under section 5.3.1.

Using the objective tests, the researcher presented student participants with their answers and they were asked to comment on the questions they found challenging and why this was so. The researcher analysed each student participants' written answers and marks for each question in both objective tests to assess where troublesome knowledge had been experienced.

Transformation

To analyse whether transformation of students' understanding occurred, each student participant's answer in 'Part B' of the general survey was analysed and compared to their answers in the two objective tests (Appendices I and J) which assessed the student participants' understanding of the threshold concepts in financial instruments. The researcher ascertained whether an incorrect answer in the general survey pertaining to a particular threshold concept now showed an improved understanding and mastery as evidenced by the mark scored in the two objective tests after engaging in two weeks of formal lectures and tutorials.

4.5 Considerations around validity, reliability and bias in this research

The validity, reliability and bias of the qualitative data collected and analysed together with the position of the researcher is considered below.

4.5.1 Validity

Creswell and Miller (2000:124) cited Schwantz (1997) to define validity as "how accurately the account represents participants' realities of the social phenomena and

is credible to them". Consistency in the application of the methodology to collect data and whether the findings presented in the research fairly reflect the data collected (Noble & Smith, 2015) enhances the validity of the research. Interview questions directed at the focus groups, the Accounting lecturer and semi-structured interviews with students were all related to the research question and sub-questions (section 1.5) in this research, thus enhancing validity.

Triangulation was used to enhance the validity and rigour of this qualitative study (Creswell & Miller, 2000). Data collection comprised five stages. The triangulation of data collected in stages one, two and four supports convergence around the threshold concepts identified. Triangulation navigates through the criticism that only educators are able to identify threshold concepts (Barradell, 2013; Knight et al., 2014) and views students' learning experience to identify troublesome knowledge as integral to the identification process. Semi-structured interviews were transcribed verbatim by an external third party which reduced the likelihood of inaccurate responses from the student participants. The transcripts were checked by the researcher for completeness and accuracy. The stages of data collection resulting in triangulation are illustrated in Figure 6 below.

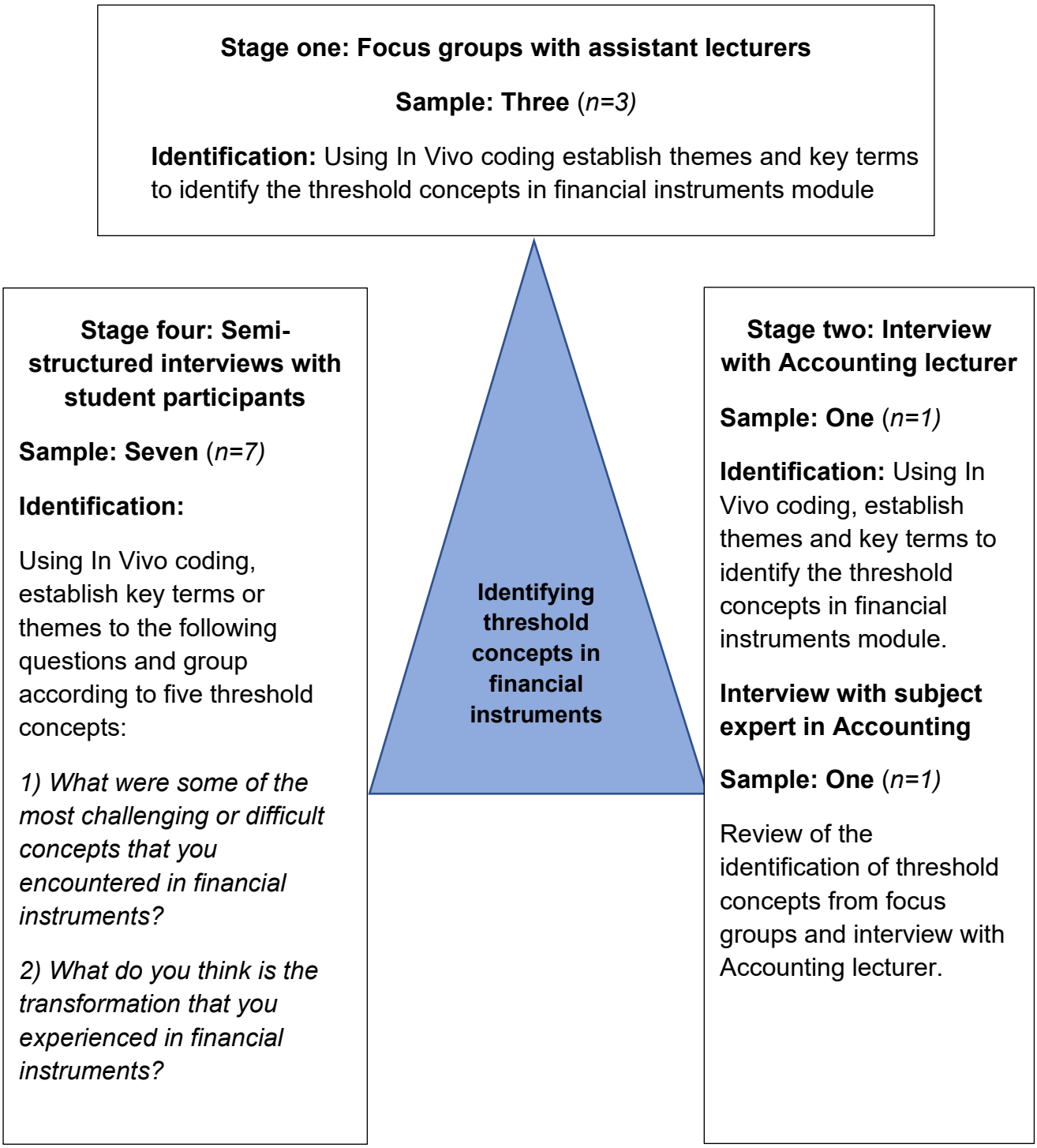


Figure 6: Visual representation of the triangulation of data to identify threshold concepts in the financial instruments module

To further enhance the validity of the research, an Accounting subject expert reviewed the identification and coding of the threshold concepts. The subject expert was not involved in the data collection or analysis.

Lastly, to support the validity of the two objective tests as an assessment, an independent review by an assistant lecturer determined that there were no instances in ambiguity of the phrasing of the questions posed around the threshold concepts and that students had had sufficient time to answer the test. Furthermore, two different versions (A and B) for each objective test were provided to minimise duplication of answers from students. The researcher was not involved in lecturing the financial instruments module at the time of conducting this research.

4.5.2 Reliability

Golafshani (2003) argues that for qualitative research to be reliable, it is essential for the research to be trustworthy, through the collection of data and the analysis of findings. Using In Vivo coding enhanced the reliability of the study as research participants' answers were analysed using their actual responses. The semi-structured interviews were transcribed by an independent, professional, external third party to enhance the degree of the study's reliability.

4.5.3 Bias

Issues around bias were considered when conducting this research. My role as the researcher was influenced by my understanding of threshold concepts in the financial instruments module. My involvement as a researcher in lecturing this module and the subsequent research had the potential to compromise the validity and reliability of the study. Therefore, a decision was taken for the researcher not to be involved in lecturing this financial instruments module.

All EDU and Mainstream students were lectured by a colleague who was interviewed in his capacity as an Accounting lecturer prior to Financial Instruments being taught in lectures. The lecturer had taught the financial instruments module in previous years. None of the data collected or the subsequent findings of this research were shared with the lecturer at the time the interview was conducted.

All interview questions were standardised and directed to all participants in the focus groups. Additionally, all interview questions in the semi-structured interviews addressing the research sub-questions were identical which enhanced the degree of comparison and limited the impact of research bias.

Since the students were familiar with the researcher as their lecturer in other modules in the Financial Reporting II course, students may have elected to be interviewed to obtain favour from the lecturer, but no instances of this participation bias were noted in this research. No gifts or other incentives were offered to any research participants.

4.6 Consent forms and security of data

4.6.1 Consent forms

In accordance with the requirements for ethical approval, signed consent forms were obtained from each of the focus group participants (Appendix G) and student participants (Appendix F) which permitted the researcher to audio-record verbal responses for transcribing.

All questions posed in the interviews, focus groups, general survey, interview questions and objective tests had been submitted to the UCT Department of Student Affairs for ethical clearance. Ethical clearance for this research was obtained in June 2018 from the School of Education Research Ethics Committee at UCT (Appendix E). No ethical issues were noted from this study.

4.6.2 Security of data

All audio recordings, written responses and transcripts are access controlled by the researcher and require a password for the data to be accessed in line with the ethical clearance confidentiality agreement. All names of the focus group and student participants have been deleted to ensure anonymity of the responses.

Due to the confidentiality of the data collected, the data is only available for scrutiny by other researchers on request.

4.7 Conclusion

This research uses the Threshold Concept Framework (Meyer & Land, 2005) and Legitimation Code Theory (Maton, 2014) to explore knowledge practices in Accounting. To identify the threshold concepts, In Vivo coding was used to surface key terms or themes in the data collected from focus groups and an Accounting lecturer. To enhance the validity of the study, the coding of the threshold concepts was reviewed

by an Accounting subject expert. The threshold concepts identified were analysed using semantic gravity and semantic density to explore the degree of abstraction and complexity of the terminology as stronger or weaker. Results from the general survey, interview responses and objective test results were analysed to explore whether disciplinary knowledge experienced as troublesome and/or a transformed understanding was encountered by student participants as they engaged with the threshold concepts in this financial instruments module.

CHAPTER 5 RESULTS AND FINDINGS

This chapter elaborates on the five threshold concepts emerging from the data collected and analysed from interviews held with assistant lecturers and an Accounting lecturer. To enhance the rigour and validity of this study, an independent Accounting subject expert reviewed the threshold concepts identified. Following this, the threshold concepts are coded using the LCT dimension of Semantics. Lastly, the chapter explores whether the exposure to the threshold concepts in financial instruments resulted in knowledge which was troublesome and/or transformation for student participants.

5.1 Identification of the threshold concepts in financial instruments

This section explores the findings relating to the research question below:

Research question one: What are the threshold concepts in the financial instruments module?

The initial coding applied as part of the In Vivo analysis resulted in themes emerging from the focus group participants' written responses to the questionnaire and the questionnaire completed by the lecturer during the interview.

Initially, four themes emerged which provided a lens into Accounting knowledge practices. The discussion of the themes and the resultant threshold concepts has been grouped between focus group participants (section 5.1.1) and the lecturer (section 5.1.2). Following the identification of the threshold concepts by the focus groups and lecturer, a review by a subject expert identified that one additional threshold concept had been identified (section 5.1.3). In total, five threshold concepts were identified in this research.

5.1.1 Threshold concepts identified by assistant lecturers in focus groups

Written responses from the questionnaires varied across the assistant lecturers, but certain common key terms or concepts were identifiable once responses had been transposed and grouped on the MS Excel matrix. To establish the threshold concepts, the initial analysis was centred on the assistant lecturers' written responses to minimise

the chance of incorrect interpretation by the researcher. The assistant lecturers identified four threshold concepts (TC1–4), namely:

1 The meaning of a 'financial instrument' as a concept (TC1).
2 Understanding the business model of an entity in the context of decisions relating to financial instruments (TC2).
3 The time value of money (TVM) principles (TC3).
4 The recognition and measurement of financial instruments (TC4).

The identification, justification and meaning of these four threshold concepts are discussed in more detail below. Comments made by assistant lecturers are labelled per participant (A–H) and additional context for each participant can be found in Appendix H.

TC1: The meaning of a 'financial instrument' as a concept

The meaning of a financial instrument emerged as a threshold concept (TC) in financial instruments (TC1). In the IFRS for SMEs, a financial instrument is defined and made explicit as "a contract that gives rise to a financial asset in one entity and a financial liability or equity instrument of another entity" (IFRS for SMEs, 2015:55). Little room exists for interpretation around the definition of a financial instrument as the IFRS for SMEs in Section 11 – *Basic Financial Instruments* foregrounds this definition.

For analysis, key terms or themes anchored in the definition of a financial instrument were collapsed under the term 'financial instrument'. For example, three focus group participants (A, C and D) identified that the characteristics associated with equity and liabilities were a threshold concept. Grouping of equity and liabilities under the term 'financial instruments' is deemed appropriate as these terms are encompassed in the definition of a financial instrument.

Following the grouping of the data under the criteria detailed above, 12 responses across the focus group participants identified that the meaning of a financial instrument is a threshold concept. Of these, eight written responses explicitly identified the definition of a financial instrument as a threshold concept.

Focus group participants' written responses flagging the meaning of a 'financial instrument' as a threshold concept are seen in the extracts below:

"The actual definition of financial instruments and how they are split between equity and liabilities." (Participant G)

"The definition of a financial instrument is a threshold concept." (Participant E)

Developing an understanding of the concept of financial instruments is of utmost importance given the learning outcomes for this module. This understanding is concerned with application of terminology or key terms, an awareness of the different parties involved with the financial instrument combined with the integration of prior knowledge learned in previous Accounting courses.

First, correct application of the definition enables students to identify the type of financial instrument, for example 'debenture' or 'loan'. Second, identifying the various parties in the transaction, for example the issuer or the holder of the 'debenture' or 'loan' has a knock-on effect on the reporting of the financial instrument in accordance with the IFRS for SMEs. Lastly, the application of the financial instrument definition results in culmination of students' prior knowledge acquired in previous Accounting courses. In first-year Accounting courses, students engaged with the definition and some examples of equity instruments (for example, shares) and applied the liability definition in a detailed manner. This emphasises how the financial instrument definition brings together different facets of knowledge which may at first seem unrelated. This is indicative of cumulative knowledge building as new knowledge is combined and developed with previous knowledge learned.

One of the characteristics associated with threshold concepts is that it may be integrative in nature (Meyer & Land, 2005). Once students master the threshold concept, they can identify connections among concepts that may previously have appeared to be mutually exclusive (Cousin, 2006). Two focus group participants' written responses highlighted the distinction between equity and debt instruments as it relates to the definition of financial instruments and how TC1 incorporates different concepts:

"… I found the difference between equity instruments and debt instruments to be key in understanding financial instruments…" (Participant A)

"This was the first time we actually saw the importance of the liability definition…" (Participant B)

In the focus group debrief, one focus group participant's response demonstrates how prior knowledge is integrated in TC1:

> *"In Financial Reporting II it was the first time that we looked at financial instruments as financial instruments, so even though we have seen the shares and the receivables…and the loans like in Financial Reporting* I (first-year Accounting course)*, Financial Reporting II was the first time that we sat and actually see how this all plays together in the real business world. "*
> (Participant C)

In summary, these responses display the focus group participants' viewpoint that the definition of a liability and an equity, also present in the definition of a financial instrument, is of paramount importance. Furthermore, identifying how the equity and liability definitions integrate in the context of financial instruments is vital in developing an understanding of recognition and measurement principles underpinning financial instruments, which also emerged as a threshold concept (TC4). This analysis, coupled with pertinent extracts from participants' responses above, concurs with Eckerdal et al., (2006) that threshold concepts form part of a larger grouping of essential concepts within a discipline.

TC2: Understanding the business model of an entity in the context of decisions relating to financial instruments

The second TC that emerged was applying the understanding of an entity's business model (TC2). The initial coding identified that five focus group participants explicitly mentioned the key term 'business model' in their written responses. Of these, four mentioned the business model and the application of the measurement model as a threshold concept.

The business model of an entity is relevant to financial assets as it refers to an entity's classification of a portfolio of financial assets where measurement of the financial instrument is driven by the intention behind holding a portfolio of financial assets (PWC Report: 11, 2018). An entity's choice results in further decisions and new concepts such as measurement streams based on this intention.

First, an entity may elect to hold a financial asset to collect contractual cash flows which results in cash flows that are paid on pre-determined dates that relate to payments of principal and interest amounts. Principal amounts refer to the capital portion of a 'loan'.

Financial instruments classified in the aforementioned category are measured using the amortised cost model (IFRS 9: A338) where time value of money (TVM) principles are applied. It is important to note that TVM principles emerged as a threshold concept (TC3). Second, an entity may elect to hold financial assets with the intention of collecting contractual cash flows and selling financial assets. In this instance, financial instruments classified in this category are measured using the *fair value through other comprehensive income* (IFRS 9: A338). Lastly, where an entity elects to use neither of the business models (amortised cost or fair value through other comprehensive income), the portfolio of financial instruments is measured at *fair value through profit or loss* (IFRS 9: A338). A brief overview of the complexities emerging from an entity's business model have been included here as this emerged as disciplinary knowledge experienced as troublesome for student participants as outlined in section 5.3.1.

Focus group participants' written responses flagging the business model as a threshold concept and the importance thereof is evident from these extracts:

> *"The use or intention affects the method you account for the asset."* (Participant B)

> *"Given the whole business model approach we use,...it is important that students understand how business operates, specifically regarding their intention* [behind holding] *the financial instrument."* (Participant C)

> *"Identifying the business model of the entity and the intention of management."* (Participant G)

In summary, the application of an entity's business model emerged as a threshold concept through the frequency of responses by focus group participants. The Financial Reporting II syllabus includes a basic understanding and application of the business model. This is a deviation from the IFRS for SMEs as this reporting framework does not include an explicit reference to an entity's business model.

TC3: The time value of money (TVM) principles

The TVM principles were identified as a threshold concept in this research (TC3). TVM forms a fundamental component in financial instruments through the amortised cost measurement model as it incorporates TVM principles that undergraduate students should have been introduced to in Finance courses. Explanations pertaining to the

TVM principles are not included in the IFRS for SMEs. A reason for this could be that unpacking and understanding these technical facets of various financial instruments like ‘bonds’ and ‘debentures’ fall primarily under the different but related discipline of Finance.

In the context of financial instruments, three elements form the foundation of TVM. The identification of the types of cash flows and calculation thereof, present value or future value calculations and the application of the discount factor to calculate interest. To apply the TVM principles mentioned here, this research proposes that mastery of the meaning of a financial instrument as a concept (TC1) and understanding the business model (TC2) are required. Students must demonstrate the ability to distinguish whether the financial instrument is an asset or liability (TC1) and whether a financial instrument is measured using the fair value model or amortised cost model (TC2).

The IFRS for SMEs defines amortised cost as:

> *“The amount at which the financial asset or financial liability is measured at initial recognition minus principle repayments, plus or minus the accumulated amortisation using the effective interest method of any difference between the initial amount and the maturing amount, and minus any reduction for impairment or uncollectability.”*
> (IFRS for SMEs 2015: Glossary of terms)

The initial coding of the focus groups’ written responses identified that TVM principles were mentioned on nine occasions. For categorisation, key terms and concepts pertaining to TVM were collapsed under the category heading ‘Time Value of Money principles’. This treatment is consistent with TC1.

The extracts from focus group participants’ written responses illustrate TVM’s crucial role in financial instruments:

> *“Although we’ve done the time value of money before, financial instruments was when I first understood and visualised the unwinding of the discounts and time value of money.”* (Participant B)
>
> *“I found that without this understanding of the time value of money the whole section (financial instruments) seems pointless.”* (Participant D)
>
> *“The ability to use TVM concepts is crucial here* too [in reference to financial instruments]*.”* (Participant F)

The written response below reveals the inter-disciplinary and integrated nature of TC3 with Finance and Accounting:

> *"TVM* [as a threshold concept]*…not introduced by financial instruments but crucial to understanding amortised cost."* (Participant H)

In summary, the TVM principles as applied to financial instruments sees the amalgamation of two disciplines, Finance and Accounting, for mastery of this threshold concept to occur. This integration can also be described as the "clicking together" of concepts (Baillie, Bowden & Meyer, 2013:229) after initially appearing as unrelated.

TC4: The recognition and measurement of financial instruments

This research suggests that exhibiting an understanding of the recognition and measurement principles is a threshold concept (TC4). The initial coding showed that four focus group participants identified the recognition and measurement of financial instruments as a threshold concept. Students should demonstrate practical proficiency that experts in Accounting would utilise when recognising and measuring financial instruments and integrate this with knowledge from the Finance discipline; for example, measurement principles such as the fair value or amortised cost model. Each type of financial instrument carries specific characteristics and transactional consequences, which in turn influences the recognition and measurement thereof.

To exhibit the integrated nature of this threshold concept, the example was used of a 'debenture' that has been purchased, thereby representing a financial asset to the entity. To apply the recognition and measurement principles in TC4, students need to:

- determine whether the 'debenture' is a financial instrument (TC1)
- ascertain if the business model is appropriate (TC2) based on the *intention* behind holding the 'debentures'; if the intention is to collect contractual cash flows, then the amortised model is most appropriate and TC4 would be applicable
- identify the type of financial instrument (TC5 – see below)
- apply the TVM principles (TC3) to measure the debenture using the effective interest rate.

The example above illustrates how mastery of this threshold concept is integrative in nature, which may be complex and troublesome.

Extracts from participants emphasised the importance of recognition and measurement of financial instruments:

> *"Understanding how the accounting treatment* [recognition and measurement] *impacts the financial instrument."* (Participant E)

> *"I remember when they were giving examples of them* [financial instruments] *and now I have to associate it with the recognition of a financial asset and financial liability."* (Participant H)

In summary, this threshold concept exemplifies how proficiency in TC1–3 and 5 impact the capability of mastering TC4 and how Finance principles need to be applied in the recognition and measurement of financial instruments.

TC5: Identifying the type of financial instrument

Initially, only four threshold concepts (TC1–4) were identified, but the Accounting subject expert reviewed the data coding and suggested that the ability to identify the type of financial instrument was a threshold concept (section 5.1.3). A secondary review of the data collected from the focus group identified that five focus group participants indicated that identifying the type of financial instrument was a threshold concept. Financial instruments incorporate an array of specific terminology and key terms that carry distinct meanings which students have been exposed to in Finance courses. Students are now expected to apply this knowledge in the context of Accounting to identify the type of financial instrument.

It is important to note that while threshold concepts are discipline-specific (Rodger et al., 2015), the inclusion of this threshold concept supports a merging of Finance and Accounting knowledge, as seen with TC3, is required for students to identify the type of financial instrument. Types of financial instruments include 'loans', 'debentures', shares and cash, which students are required to identify.

This research argues that the terms defined in the IFRS for SMEs do not represent an exhaustive list of terminology that students are required to demonstrate an innate understanding and mastery of. The IFRS for SMEs includes a glossary of terms, in which the term 'financial instruments' is defined. In Section 11: *Basic Financial Instruments,* terms such as financial instruments, financial assets, financial liabilities, publicly traded, amortised cost and effective interest method have been specifically

included. The data collected from focus groups in this research suggests that additional terms are also equally important in financial instruments.

Lecture notes, lecture examples and tutorial questions provided to second-year Accounting students illustrate that students must exhibit a mastery and an in-depth understanding of other terminology appropriate to financial instruments. First, identification and application of the terms 'issuer' or the 'holder' of the financial instrument is vital as students must distinguish whether the financial instrument gives rise to a financial asset or liability depending on whether the entity is the issuer or the holder of the instrument. Second, assessing whether the share is debt or equity for the issuer or the holder of the instrument. Third, understanding and applying the definition of a 'bond' or a 'debenture' is important as students must show an understanding of the financial impact of issuing or holding such a financial instrument.

Analysis of the written responses in relation to TC5 highlighted the following:

> *"Knowing whether you issued or acquired the instrument has a big impact on how you* [the holder] *account for it."* (Participant C)

> *"The idea of a bond or debenture…I had never heard of this type of instrument before."* (Participant E)

In the debrief session, the importance of terminology also emerged as a point of discussion as is evident from the extract below:

> *"I would read that scenario over and over again trying to look for some indication of whether they issued or they bought* [the instrument] *and I would just cling to that word for dear life … like anything that would give me some sort of indication that I would just cling* [to it] *to help me to structure my answer… because definitely without it, it would change everything that you need to do."* (Participant C)

The analysis of written and verbal responses collected from the focus groups together with the guidance in the IFRS demonstrates the importance of identifying the type of financial instrument and application of the terminology in financial instruments. Students are required to understand and apply the terminology associated with financial instruments by combining knowledge covered in Finance courses with Accounting principles.

5.1.2 Data collected from the Accounting lecturer

The semi-structured interview with the lecturer was conducted in the same manner as the focus groups following the identical sequence to identify the threshold concepts. The data and responses collected from the focus groups were not shared with the lecturer. The lecturer's written responses were coded to identify four threshold concepts in financial instruments:

1 The meaning of a 'financial instrument' as a concept (TC1).
2 Understanding the business model of an entity in the context of decisions relating to financial instruments (TC2).
3 The time value of money (TVM) principles (TC3).
4 Subsequent measurement principles as seen in the disposal of financial instruments through sale.

The first three threshold concepts (TC1–3) identified by the lecturer were similar to those identified by the assistant lecturers as discussed above. Notably, the last threshold concept identified by the lecturer was not listed in the previous responses received from the assistant lecturers in the focus groups. Disposals of financial instruments through sale is covered via the application of TC4 – *The recognition and measurement of financial instruments* and given the infrequency of the response in the focus groups, it was not deemed appropriate for this to be included as a separate threshold concept.

TC1: The meaning of a 'financial instrument' as a concept

The lecturer, deemed a knower in this research, also identified TC1 as a TC:

> *"Identifying if you have a financial instrument is a threshold concept."*

The lecturer indicated that students had engaged with concepts which formed part of the foundation for this financial instruments module in previous Accounting courses, but the degree of difficulty was enhanced in Financial Reporting II:

> *"We are repackaging concepts that students have already seen, but I believe the complexity is enhanced."*

TC2: Understanding the business model of an entity in the context of decisions relating to financial instruments

The lecturer mentioned the significance of understanding the business model as it relates to the two appropriate measurement models:

> *"Application of the two measurement models* [fair value, amortised cost] *applicable to financial instruments is a threshold concept."*

TC3: The time value of money (TVM) principles

The extract below shows how Accounting and Finance disciplines merge in the financial instruments module:

> *"Incorporating time value of money principles in the amortised cost model is critical for this module."*

The lecturer indicated that students struggle with the application of TVM in the context of the amortised cost measurement model:

> *"The most challenging for students is the mathematical concept called amortised cost…students struggle with the maths rather than the reporting."*

5.1.3 Consultation with independent subject expert in Accounting

The data collection and analysis used to identify the threshold concepts emerging from the from the focus group participants and the lecturer were provided to the Accounting subject expert. Initially, only four threshold concepts had been identified:

1 The meaning of a 'financial instrument' as a concept (TC1).
2 Understanding the business model of an entity in the context of decisions relating to financial instruments (TC2).
3 The time value of money (TVM) principles (TC3).
4 The recognition and measurement of financial instruments (TC4).

The subject expert agreed with the four threshold concepts already identified, but determined that a fifth threshold concept relating to the *identification of the type of financial instrument* should be included (TC5). Consultation with the subject expert showed that terminology is a crucial element in this topic and an in-depth understanding of the context specific terms in financial instruments is required to

construct knowledge. For this reason, a fifth threshold concept (TC5) related to identifying the type of financial instrument was included in this research.

5.1.4 Further threshold concepts identified in the focus groups not explored in this study

Other threshold concepts could also emerge from further data collection and analysis. Three examples of further threshold concepts identified but not analysed in this research are included below.

One focus group participant identified the use of a financial calculator as a threshold concept. The infrequency of the response and the belief that operating a financial calculator does not rely on the mastery of the threshold concepts identified rendered the use of a financial calculator as a threshold concept inappropriate, but it may require later investigation. However, three student participants experienced troublesome knowledge related to the financial calculator (section 5.3.3).

The term ‘transaction costs’ appeared in two focus group participants’ written responses as a threshold concept. The treatment of transaction costs from an Accounting perspective is required knowledge and is dealt with in the recognition and measurement of a financial instrument (TC4). The infrequency of ‘transaction costs’ in the written responses also supported the assessment that including the term as a separate threshold concept was inappropriate, but it may require later investigation.

5.1.5 Summary of threshold concepts identified

One of the research aims was to identify the threshold concepts emerging from the financial instruments module using the TCF to analyse data collected from assistant lecturers and a lecturer. Walker (2013:248) asserts that identification of threshold concepts in a discipline could indicate “a state of expert knowledge”. This research utilised independent interviews together with focus groups to establish the five most prominent threshold concepts in the financial instruments module:

1 The meaning of a ‘financial instrument’ as a concept (TC1).

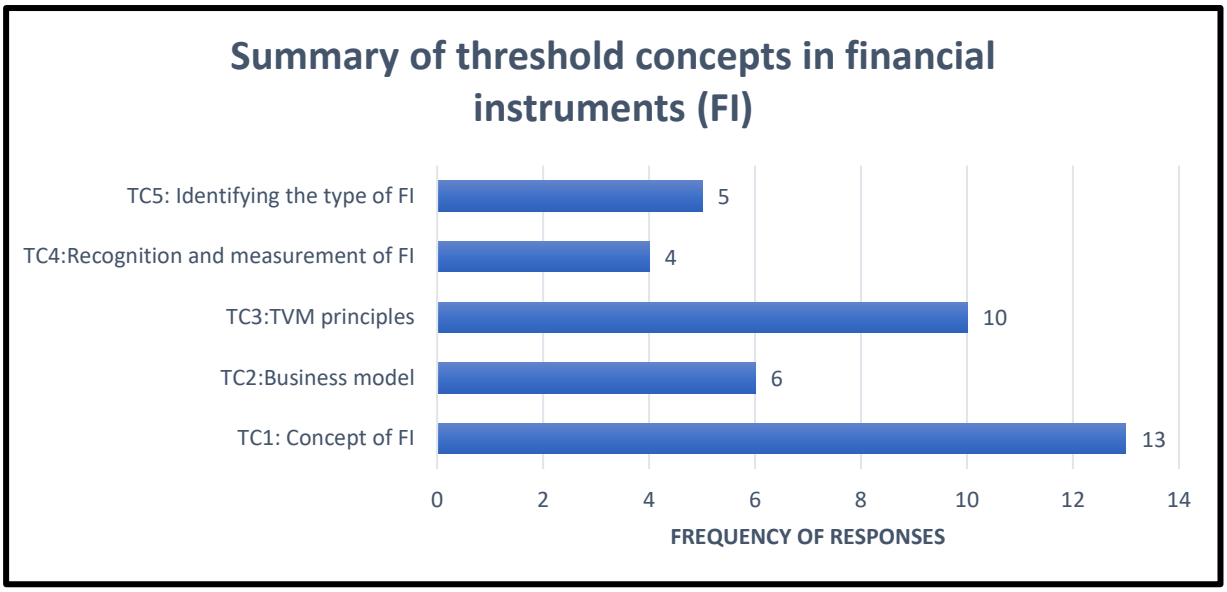
2 Understanding the business model of an entity in the context of decisions relating to financial instruments (TC2).

3 The time value of money (TVM) principles (TC3).

4 The recognition and measurement of financial instruments (TC4).

5 Identification of the type of financial instrument (TC5).

Graph 1 summarises the frequency of the responses across the five threshold concepts:



Graph 1: Threshold concepts including the frequency of responses by assistant lecturers (A–H) and the Accounting lecturer

The understanding and application of the concept of a financial instrument (TC1) was foregrounded by the focus group participants and the lecturer across 13 responses, illustrating its importance in financial instruments. The remaining four threshold concepts, the business model (TC2), TVM principles (TC3), the recognition and measurement of financial instruments (TC4) and the identification of the type of financial instrument (TC5) also emerged as threshold concepts. The analysis has illustrated how some of the threshold concepts are integrated and interrelated.

As indicated, a qualitative approach was used to identify the threshold concepts in the financial instruments module. Focus groups and a semi-structured interview with a lecturer were used to obtain participants' responses. Barradel (2013) asserts that dialogue is a frequent task when attempting to recognise threshold concepts. The focus groups in this research were more inclined towards the dialogue mentioned by Barradel (2013) and the responses provided a beneficial source of data through the various interpretations of the threshold concepts in financial instruments.

Data analysis also demonstrated one of the criticisms raised by Rowbottom (2007) owing to the subjectivity and the degree of certainty in identifying threshold concepts. To navigate this criticism, the methodology used in this research design employed an independent subject expert to review the accuracy of the threshold concepts that had been identified to enhance the study's validity. The analysis also showed how the threshold concepts identified are foregrounded in the IFRS which is the deemed source of knowledge and a source of legitimate text in Accounting.

The remaining research questions focus on analysing the threshold concepts identified in the financial instruments module using the LCT dimension of Semantics and lastly, this research explores whether exposure to the threshold concepts in the financial instruments module resulted in the emergence of knowledge experienced as troublesome and/or a transformed way of thinking and understanding for student participants.

5.2 Viewing the threshold concepts through the lens of Semantics

This section explores the findings relating to the research question below:

Research question two: Using the threshold concepts identified in financial instruments, are semantic gravity and semantic density stronger or weaker?

This section employs the LCT dimension of Semantics (section 2.3.1) to provide insight into the knowledge practices in Accounting using the five threshold concepts identified in sections 5.1.1 to 5.1.3.

Semantic gravity refers to the extent of abstraction within a concept or the extent to which meaning is dependent on or independent from the context in which it used (Maton, 2011, 2014). Semantic density refers to the "condensation of meaning" within practices and refers to particular "symbols, terms, concepts and phrases" in a discipline (Maton, 2014:129). The semantic plane comprising semantic gravity and semantic density, as seen in Figure 7, is plotted along a continuum and assists in determining whether semantic gravity and density are stronger or weaker in particular teaching contexts . Figure 7 is a repeat of Figure 4 but is included for ease of reference in this section.

The five threshold concepts identified in this research are as listed below:

- The meaning of a ‘financial instrument’ as a concept (TC1)
- Understanding the business model of an entity in the context of decisions relating to financial instruments (TC2)
- The time value of money (TVM) principles (TC3)
- The recognition and measurement of financial instruments (TC4)
- Identifying the type of financial instrument (TC5).

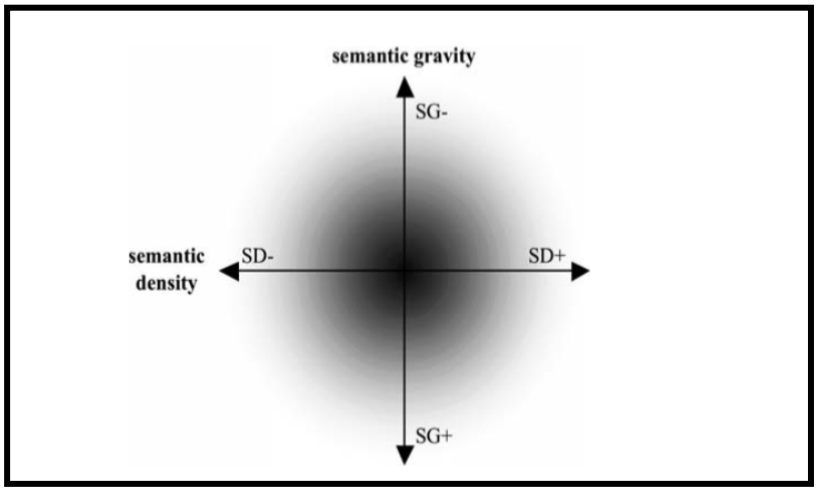


Figure 7: The semantic plane (Maton, 2014:131)

Using Chemistry as an example, Blackie (2014) asserts that language serves as a medium to share conceptually dense ideas and theories. In her research, Blackie (2014) determined that Chemistry as a natural science possesses a more hierarchical knowledge structure and concentrates complicated ideas into key terms. This research into threshold concepts in Accounting proposes that these five threshold concepts in financial instruments demonstrate knowledge practices in the academic discourse of Accounting. The findings from this research demonstrate the semantic density encountered in key terms like ‘debentures’. Semantic gravity of concepts like ‘financial instrument’ and ‘business model’ highlighted the degree of abstraction and the integrated nature of the threshold concepts. One of the characteristics associated with threshold concepts is that they are integrative (Meyer & Land, 2005). This integration presented itself through TC1, TC3 and TC4.

Semantics is used as a lens through which to view the five threshold concepts identified in this research. These were viewed as a collective rather than individually as some of

the threshold concepts are connected or interrelated. Given this, evaluating the terms as a collective was deemed appropriate.

This research suggests that the identified threshold concepts are anchored in abstract concepts, indicating weaker semantic gravity (SG-). Due to the presence of short key terms and concepts that are fairly complex, these correlate to stronger semantic density (SD+). For example, the term 'financial instrument*'* is determined as follows:

> *"A financial instrument is a contract that gives rise to a* ***financial asset*** *of one entity and a* ***financial liability*** *or* ***equity*** *of another entity."* (IFRS for SMEs, 2015:55)

From this, the degree of abstraction and the level of meaning contained in a word or phrase can be analysed. The definition of a financial instrument provided by the IFRS for SMEs signals a high degree of abstraction as the term represents a general concept. This corresponds to weaker semantic gravity as the concept of a financial instrument does not alter its meaning as the context changes; it can only be understood if prior knowledge of assets, liabilities and equity has been mastered in prior Accounting courses. Application of this general concept influences how students engage with the remainder of the financial instruments module as discussed in section 5.1.1. A 'financial instrument' is explicitly defined in the IFRS for SMEs, a source of legitimate text in Accounting which is explored in Chapter 3 – *Overview of the Accounting discipline.* The meaning of a financial instrument is therefore less contingent upon the context in which it arises due to the definition in the IFRS for SMEs. The remaining five descriptions relating to semantic gravity are not considered given the abstract nature of TC1 as discussed above.

This research now explores the semantic density using the meaning of a financial instrument as a concept (TC1). The ability to extract meaning from the definition above hinges on students' proficiency in applying previous knowledge learned to coalesce with the new knowledge presented in financial instruments. This occurs through the definitions of a financial asset, financial liability and equity each of which possesses its own context specific meaning. These meanings are closely related to the academic discourse of Accounting which suggests significantly stronger semantic density.

Another example is the term 'business model' (TC2) which presents itself as a key concept or term in financial instruments.

To someone completely unfamiliar with the term a ‘business model’ in the context of financial instruments, this term may refer to the choices a business makes. In this instance, the term would carry weaker semantic density as the person is not immersed in the Accounting discipline or has little understanding of the term. In contrast, for an Accounting student learning about financial instruments, the term ‘business model’ may carry a distinct meaning as it relates to the intention behind holding a portfolio of financial assets and it therefore contains stronger semantic density. In essence, the term on its own carries plenty of meaning to an Accounting student. This is similar to the experience of Myers (2017) regarding the term ‘depreciation’ where weaker semantic density would manifest for a “man in the street” but presenting the term to an Accounting student would reflect stronger semantic density.

Given the complexity and specialist terminology included in the terms ‘financial instrument’, ‘financial asset’, ‘financial liability’ and ‘business model’, stronger semantic density prevails. To see an example of these terms in a real-life context can be challenging for students when their lived experiences are not anchored in terminology of this kind. This narrative emerged as troublesome for student participants who attended the interviews.

In summary, TC1 possesses weaker semantic gravity owing to the abstract nature of the concept which is not dependent on the context in which it is used due to the term ‘financial instrument’ being strictly defined in the IFRS for SMEs. Stronger semantic density is evident in the term ‘financial instrument’ as the term carries a distinct meaning in the context of Accounting with a high degree of complexity, which was explored in section 5.1.1 (TC1).

5.2.1 Summary of threshold concepts coding using Semantics

This section analysed and showed how the threshold concepts identified in financial instruments are indicative of weaker semantic gravity and stronger semantic density using TC1 to highlight this. Given that all five threshold concepts identified in this study are located within financial instruments and some of the threshold concepts are integrative in nature, the Semantics analysis applies equally to all five concepts. The analysis places the threshold concepts (TC1–5) in the semantic plane’s top right segment (Figure 8).

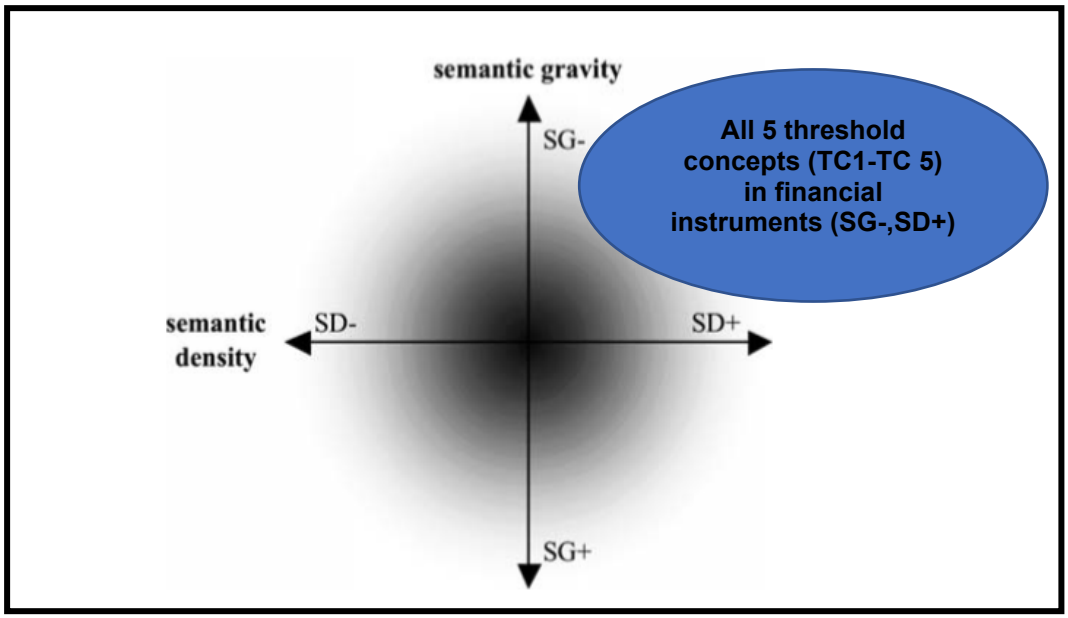


Figure 8: The semantic plane with threshold concepts (TC1–5) identified in the financial instruments module assessed as possessing weaker semantic gravity (SG-) and stronger semantic density (SD+)

5.3 Exploring the troublesome knowledge and/or the transformed understanding experienced by student participants

This section explores the findings relating to the research question below:

Research question three: Did the exposure to the threshold concepts in financial instruments result in troublesome knowledge and/or transformed understanding for ACI students?

Findings pertaining to the knowledge experienced as troublesome are grouped according to the five threshold concepts are detailed in section 5.3.1. Consideration of the type of troublesome knowledge experienced based on the interview extracts is also incorporated. An analysis of whether student participants' primary Discourse influenced the knowledge experienced as troublesome is provided in section 5.3.2. Thereafter, findings from the analysis pertaining to the transformed understanding and thinking emerging from the data analysed from interviews, the general survey and the objective tests are included in sections 5.3.6 to 5.3.7.

After applying the sample selection criteria contained in *Chapter 4 – Research methodology,* 10 students were contacted for a voluntary interview; seven interviews

were conducted. Comments made by student participants were labelled individually (J–P). Additional context of each student participant by education stream (Mainstream or EDU), language and race can be found in Appendix H.

5.3.1 Troublesome knowledge experienced by student participants

The troublesome knowledge experienced by student participants is discussed below together with comments made during the interviews. All troublesome knowledge experienced has been included in this component of the research. Consideration of the type of troublesome knowledge as ritual, inert, conceptually difficult, alien, foreign, tacit knowledge or troublesome language based on the extracts shared from the interviews is also included for each threshold concept. A description of the types of troublesome knowledge is included in section 2.2.2.

All the threshold concepts identified in financial instruments had some degree of troublesome knowledge associated with them based on the student participants' responses. Surfacing students' troublesome knowledge is also an approach in identifying threshold concepts (Hesterman, Male & Baillie, 2011).

TC1: The meaning of a 'financial instrument' as a concept

Four student participants experienced disciplinary knowledge as troublesome associated with TC1. The data analysis demonstrated how they struggled to identify which party had a financial asset and which had the financial liability or equity instrument:

> *"Identifying who has financial asset and liability, equity was challenging…it took a while to pick up, actually this a financial instrument … I think having to identify that it's a financial instrument is a challenge."* (Student Participant J)

> *"Sometimes they give you a question and I couldn't distinguish whether it was a financial asset or liability."* (Student Participant K)

> *"The whole debt and equity instrument thing was confusing for me…asset for you but what's it for me."* (Student Participant L)

Interestingly, student participant L could identify that the financial instrument was in fact a debt instrument in objective test two but struggled to apply the definition of a

financial instrument in objective test one and only scored one-and-half out of four marks in this regard.

Analysis of the student participants' responses shows that student participants K and L experienced troublesome knowledge as a result of troublesome language when applying the terms 'financial asset', 'financial liability' and 'equity'. Student participant K listed English as her first language but still experienced similar troublesome knowledge to student participant L, who listed English as her second language. In this instance, possessing English as a first language did not limit the disciplinary knowledge experienced as troublesome. Section 5.2 demonstrated how the complexity of these terms resulted in stronger semantic density as seen in TC1. Student participant J experienced knowledge as troublesome emerging from alien knowledge when needing to identify the financial instrument.

The remaining three student participants (M, N and P), who did not experience troublesome knowledge with the concept of a financial instrument, could apply the definition of a financial instrument and distinguish between equity and debt instruments in each of the objective tests written. Two of the student participants (O, P) could identify whether the instruments were financial instruments but struggled to provide a reason for their answers in objective test one.

This research proposes that the troublesome knowledge experienced lies in students' challenges in comprehending and applying the concept of a financial instrument which also encompasses debt and equity instruments.

TC2: Understanding the business model of an entity in the context of decisions relating to financial instruments

Two of the seven student participants (J, L) indicated troublesome knowledge associated with the business model of an entity. This emerged from the student participants struggling to identify the purpose of the business model in the context of financial instruments.

Student participants were presented with their answers to the first objective test which assessed TC2. Student participants J and L scored one out of a possible three marks. When asked whether they found TC2 troublesome, the student participants responded:

"I still don't know what we mean by 'business model'…I think that is my challenge...Initially I thought that when we say 'business model' we're looking at what they do on a daily basis, what's part of their business segment, their operations… if someone asked me to explain this to another person I wouldn't be able to as I have no understanding." (Student Participant J)

"…I don't think I understand the 'business model'." (Student Participant L)

An analysis of student participant J's response highlights an important point. Due to the abstract nature of the concept, a lower semantic gravity presents itself as the student participant thinks of this TC in terms of what a business does as part of its ordinary activities rather than its meaning in financial instruments; this is indicative of alien knowledge and/or conceptually difficult knowledge. The term 'business model' possesses stronger semantic density as the concept concerns the intention behind holding a portfolio of financial assets. This determination was made in section 5.2 of this chapter. Misunderstanding of the term 'business model' indicates instances where students adjust their current understanding of terms to adapt to the terminology in new topics learned (Eckerdal et al., 2006:105). Making the threshold concepts explicit within topics may reduce the likelihood of such misconceptions occurring.

The remaining five student participants' (K, M, N, O, P) responses to the question on the business model were analysed. Two student participants (M, P) in this grouping scored only one out of three marks, while the remaining three (K, N, O) all scored two out of three marks. None of the five student participants explicitly mentioned understanding the topic of the business model as being troublesome.

TC3: The time value of money (TVM) principles

Five of the seven student participants (J, L, M, N, and O) experienced disciplinary knowledge as troublesome when engaging with the TVM principles in the amortised cost measurement model. Analysis of the interview transcripts and the objective test answers demonstrated that troublesome knowledge specifically emerged from the financial instrument 'debentures'. Student participants struggled to calculate the carrying amount of the 'debenture' where the coupon date was different to the entity's financial reporting date. This assessment is corroborated by the extracts from the interviews below where they indicated that knowledge was experienced as

troublesome when engaging with ‘debentures’ in objective test two (Appendix J – question 3):

> *“The most difficult part was the part where you had your different periods*.” (Student Participant M)
>
> *“The parts where the coupon date and the reporting date was different …it was getting so complex and I am not really good with Finance…It is just a lot of numbers and maths to it rather than just Accounting…But the actual maths to it is where I get a bit confused.”* (Student Participant N)
>
> *“I think what I struggled with in this particular question is the dates that differ because I have to remember to include a bit of it for this year and then remember that you still need to include the other bit in next year.”* (Student Participant O)

It is evident that the student participants found it challenging to integrate the TVM principles learned in Finance courses with Accounting principles in TC3. These troublesome experiences stem from conceptually difficult knowledge due to the complexity of being presented with Finance principles and applying them in Accounting. Integration with other topics which they may have felt were unrelated is a characteristic associated with threshold concepts.

Analysis of the second objective test, which specifically assessed TVM principles, demonstrated that all seven student participants struggled with basic TVM concepts where the coupon payment of the ‘debenture’ differed from the entity’s reporting date. While student participants K and P did not specifically mention troublesome knowledge experienced with TC3, it is evident that their answers in this objective test exhibited that application of the TVM principles proved challenging due to them scoring two out of six marks.

TC4: The recognition and measurement of financial instruments

Analysis of the interview transcripts showed that one student participant experienced troublesome knowledge which can be categorised as alien knowledge relating to this TC:

> *“I am not sure what a financial instrument is exactly and what it does and what you use them for.”* (Student Participant N)

Two student participants struggled to understand the role of transaction costs, why these costs were incurred in the context of financial instruments and the Accounting treatment thereof:

> *"When you had to either capitalise the transaction costs or expense them, I struggled with that a little bit."* (Student Participant K)

> *"Why can't I just buy the financial instrument myself and not incur the transaction costs?"* (Student participant M)

The responses from student participants (N and M) illustrate how the troublesome knowledge stems from alien knowledge as the student participants struggled to understand the purpose behind holding financial instruments and that the acquisition thereof is done through a broker or secondary market. Analysis of student participant K's response is indicative of conceptually difficult knowledge as this participant struggled to realise that the treatment of transaction costs differs depending on the type of financial instrument (asset or liability).

TC5: Identifying the type of financial instrument

When asked whether being able to identify the type of financial instrument was integral to the topic, all seven student participants indicated that this was imperative. Six of the seven student participants (J, L, M, N, O, and P) indicated that difficulty was experienced when attempting to identify the type of financial instruments. Student participants were specifically asked whether they had heard and understood the term 'debenture'. It was evident from the data analysis that understanding the term was troublesome:

> *"I also struggled, I didn't know what a debenture was."* (Student Participant J)

> *"I've heard it before but also I didn't know what it was."* (Student Participant L)

> *"I still struggle with what a debenture actually means … I did Finance so I heard it before, but I don't have a full understanding of what it is. I know there is a lot of terminology but the easier ones like the financial assets and all of those things it is easier to understand…but debentures and bonds I don't really understand."* (Student Participant N)

The analysis demonstrates that knowledge experienced as troublesome emerged from troublesome language as seen in the term 'debenture' as student participants

struggled to understand what this term encompassed. Similar troublesome knowledge was experienced by the student participants as seen in the extracts above even though only student participant (L) listed English as her second language. The term requires specific understanding before the Accounting principles of measurement and recognition can be applied. Student participant N's response also indicates troublesome knowledge due to conceptually difficult knowledge as Accounting principles merge with Finance. The analysis also shows how the semantic gravity becomes weaker from basic financial assets like 'loans' to more complex 'debentures'.

The extracts from the transcripts below highlight student participants' perception of the importance of terminology in financial instruments:

> *"Terminology is very important because you could be doing a calculation in debentures … it's very important that you know who you're dealing with and from their perspective* [issuer or holder] *in order to produce answers."* (Student Participant K)

> *"Definitely that is the one thing I struggled with because of my language barrier."* (Student Participant M)

Student participant M indicated how possessing English as a second language impacted his ability to master TC5. To navigate the difficulty experienced with terminology in Accounting, he spends time taking many notes in class, trying to understand the term in his first language, being Afrikaans, and then translating this back into English.

A specific question posed in objective test one assessed whether students could identify the issuer or the holder of a financial instrument. This question focused on students' understanding of the terminology associated with financial instruments. The analysis of the objective test answers showed that only student participant L incorrectly identified the issuer and the holder. Given the data available, this incorrect answer could be due to student participant L not having been exposed to financial instruments before Financial Reporting II.

5.3.2 Determining whether student participants' primary Discourse impacts the troublesome knowledge

Part of this research aimed to investigate whether the disciplinary knowledge experienced as troublesome by student participants was influenced by their primary Discourse as part of research question three (see section 5.2). To explore this line of inquiry, responses to the question, *"Of the things that you found to be troublesome or challenging, do you think that your home life contributed to this?"* were analysed.

The extracts from the responses below show a degree of familiarity with some of the concepts underpinning financial instruments:

> *"Since my family is in academia I have heard this stuff before."* (Student Participant N)

> *"At home we would speak about these things."* (Student Participant P)

Some student participants' limited exposure to financial instruments in their primary Discourse impacted the troublesome knowledge experienced, as is evident from the extracts below:

> *"You know I can safely say that it in a way disadvantaged me as I never heard of debentures before."* (Student Participant J)

> *"Let's say if my mother knew something about debentures or shares, financial instruments would have maybe resonated with me more."* (Student Participant K)

> *"Everybody is always talking about it at home but I don't really understand… what it is. Then with loans and stuff my parents and my brothers had to get loans so I know sort of what it is and I understand loans a lot more than the meaning of a debenture."* (Student Participant N)

> *"If I was exposed to it from a child I would be like more relatable towards it, I will be like okay I think I know this part, so I know how it works."* (Student Participant O)

For Student Participant L, engaging with financial instruments in Financial Reporting II signalled the first time that she ever learned or encountered financial instruments, which could be why she was the only student participant who could not correctly identify the issuer and the holder of the financial instrument in objective test one. The

extract from the interview demonstrates how her primary Discourse did not include any mention of financial instruments:

> *"Everything that I learned, I am doing this for the first time. I am seeing these things for the first time. No one in my family speaks about these things the way I do, we don't talk about these things."* (Student Participant L)

Only one student participant was completely familiar with financial instruments due to having taken out a student loan to fund undergraduate studies:

> *"During my first year I funded my studies with a student loan so I am quite familiar with the whole thing, and my dad made me go there, I was very involved in the process, reading the contracts, looking at the interest rates."* (Student Participant P)

For student participant M, engaging with the financial instruments module enabled him to apply his knowledge on interest rates in relation to 'loans' and share this with a family member:

> *"My brother took out a loan and I said why didn't you come to me, this loan has a high interest rate, I think it was 20 percent, I said why didn't you guys come to me and I got so angry because now he was stuck."*

In summary, most of the responses demonstrated how limited exposure to financial instruments in student participants' primary Discourses influenced the troublesome knowledge experienced when exposed to the threshold concepts in financial instruments. For student participant P, exposure to the process of obtaining a student loan enabled her to comprehend the Accounting implications for the various parties in the loan agreement and the impact of interest rates. This lived experience may have assisted her in mastering the threshold concepts in financial instruments. Besides student participant P, the extracts above show limited exposure to financial instruments in the student participants' primary Discourse for both EDU and Mainstream students. For student participant M, exposure to the threshold concepts in the financial instruments module enabled him to guide family members when scrutinising loan agreements.

5.3.3 Other troublesome knowledge experienced by student participants

This section outlines two facets of knowledge experienced as troublesome by the student participants which fall outside of the five threshold concepts identified in this research.

Presentation and disclosure of financial instruments

Four of the seven student participants (J, K, O, and P) indicated that they felt troublesome knowledge emerged from applying the presentation and disclosure requirements particular to financial instruments. The principles pertaining to presentation and disclosure of financial instruments were not identified as a threshold concept in the focus groups, or by the lecturer or subject expert. Presentation and disclosure refer to the reporting principles to be applied in preparing financial statements.

The troublesome knowledge emerging from the presentation and disclosure of financial instruments is explicit from the student participants' responses below:

> *"Presenting those financial instruments in the financial statements… that is the most difficult…I think my problem was presenting."* (Student Participant J)
>
> *"I find presentation and disclosure very challenging."* (Student Participant K)
>
> *"I just don't know how to do disclosures."* (Student Participant P)

Use of a financial calculator

The use of a financial calculator in the calculations required for financial instruments gave rise to knowledge experienced as troublesome for three (J, M, N) of the seven student participants. The troublesome knowledge stemmed from the student participants not knowing how to input figures correctly for TVM calculations under the amortised cost model.

> *"It makes me panic because I would punch into the calculator and it would be wrong … I needed to input again, so it was really a struggle, it was really a challenge."* (Student Participant J)
>
> *"the difficulty of it was the financial calculator … yes someone teaches you how to use it, but I feel like we didn't get enough practice using it."* (Student Participant M)

"I have the financial calculator but then I didn't know how to use it." (Student Participant N)

5.3.4 Summary of troublesome knowledge experienced by students

This research sought to identify whether exposure to the threshold concepts resulted in student participants experiencing disciplinary knowledge as troublesome. The analysis highlights how a large proportion of the student participants' responses and experiences converge around the threshold concepts presented in this research. However, not all the troublesome knowledge students experienced aligned with the threshold concepts identified by the assistant lecturers and Accounting lecturer. This was evident in student participants expressing troublesome knowledge in relation to presentation and disclosure requirements for financial instruments and use of a financial calculator. The analysis demonstrated how the types of troublesome knowledge experienced related to troublesome language (TC1 and TC5), conceptually difficult knowledge (TC2 and TC3) and alien knowledge (TC2 and TC4).

From a language perspective, there did not appear to be a significant difference between EDU and Mainstream students as there was a fair degree of commonality in the troublesome knowledge experienced based on the interview transcripts as seen in TC1 and TC3. The troublesome knowledge experienced due to troublesome language, particularly with the term 'debentures', further demonstrates the complexity of terminology in financial instruments and illustrates stronger semantic density. The high degree of abstraction, indicative of weaker semantic gravity is presented when students would not encounter these concepts in their lived experiences.

The analysis also demonstrates how student participants' primary Discourse and limited exposure to the concept of a financial instrument influences the knowledge experienced as troublesome. Limited exposure seemed to be experienced by some EDU and Mainstream students. However, there were instances, as seen with student participant N, where a degree of familiarity with a 'loan' did not necessarily minimise the troublesome knowledge experienced when exposed to the threshold concepts in financial instruments. Only student participant L indicated that the first time of hearing and learning about financial instruments was in Financial Reporting II. Student participant M shared that his knowledge of financial instruments and interest rates may have assisted his brother in identifying that the loan he had obtained charged a high

interest rate. This illustrates how exposure to the threshold concepts in the secondary Discourse of Accounting may influence students' primary Discourse.

5.3.5 Transformation experienced by student participants

Transformation, one of the characteristics associated with threshold concepts, refers to a material shift in a student's perception of a subject or concepts (see section 2.2.2).

To assess the characteristic of transformation, transcripts from the semi-structured interviews were analysed and grouped according to threshold concepts identified in the financial instruments module. Following this, the general survey responses were compared to student participants' answers in the objective tests. The data emerging from the identification of the five threshold concepts in the financial instruments module was not shared with the student participants.

A transformed way of thinking experienced by the student participants ranged from the meaning of 'financial instrument' as a concept (TC1), the recognition and measurement of financial instruments (TC4) and identifying the type of financial instrument (TC5).

5.3.6 Analysis of interview transcripts

The analysis of student participants' responses showed that six of the seven student participants experienced some degree of transformed understanding which linked up to some of the threshold concepts identified in section 5.1.5.

TC1 and TC5: The meaning of a 'financial instrument' as a concept and identifying the type of financial instrument

> *"I think moving forward I'll never not know who has the debt instruments because it was really hard for me to see."* (Student Participant L)
>
> *"Shares can either be debt or equity…this is how I think now. You know that it is not always equity, you need to go and assess the characteristic."* (Student Participant M)

TC4: The recognition and measurement of financial instruments

> *"How financial instruments actually work … I would say my transformative characteristic was going from not really seeing the whole picture to seeing now how everything should work."* (Student Participant K)

"I would see these are the calculations, these are the numbers but I wouldn't see like what's happening actually behind the numbers…like why are we doing this?" (Student Participant O)

TC5: Identifying the type of financial instrument

"I guess it's calling things financial assets and financial liabilities. It is still the same thing but now they have a name to it and what they actually are." (Student Participant N)

5.3.7 Analysis of the general survey and objective tests

Analysis of the general survey responses showed that three student participants (K, N, and O) incorrectly identified that the financial instrument, a 'loan', was a financial asset rather than a financial liability. This question assessed students' initial understanding of TC5 – *Identifying the type of financial instrument*. Two of the student participants (K and N) experienced a transformation of understanding as was evident from their answers to their second objective test as they were able to demonstrate mastery of TC5. In contrast, student participant O continued to struggle with the application of TC5 as she incorrectly identified the type of financial instrument as an equity instrument rather than a financial liability in objective test two.

5.3.8 Summary of the transformation of student participants' understanding

The extracts above demonstrate some transformed way of thinking experienced by the student participants when engaging with the threshold concepts in financial instruments. An assessment of the responses shows how this transformed way of thinking and understanding correlates to TC1, TC4 and TC5. The degree of transformation across Mainstream and EDU students varied. For example, student participants L and M (both EDU) experienced transformation for TC1 and TC5, while student participants K and O (both Mainstream) experienced a transformed way of understanding in relation to TC4. Importantly, student participant L indicated not having heard of financial instruments before being exposed to them in Accounting so transformed understanding in the context of this threshold concept is reasonable. The transformation of understanding experienced by student participants L and M may also stem from language as these student participants listed English as their second language. Conversely, student participants K and O (both Mainstream) shared that the

transformed way of thinking that they encountered in financial instruments related to TC4 whereas no EDU student participants explicitly stated this.

On this point, the objective tests were written over a two-week period so some of the student participants may still have experienced a transformed way of understanding and thinking after writing these summative assessments as the student participants prepared for the year-end examinations. The analysis above shows limited transformative experiences, which could be due to the timing of the interviews, as a significant shift in understanding and mastery of the threshold concepts could have occurred as the student participants prepared for the year-end examinations. Transformed understanding could have also been inhibited due to the teaching methods adopted by the lecturer of the module which may have influenced the mastery of the threshold concepts.

In the context of distinguishing threshold concepts from core concepts, transformation is imperative in identifying threshold concepts (Meyer & Land, 2003). While student participants did not mention transformation for TC2 and TC3, this research argues that both TC2 and TC3 are threshold concepts given the analysis in section 5.1.1 above. In addition, transformation of understanding among student participants could have occurred after the interviews were conducted as they engaged with the threshold concepts in preparation for the year-end examinations at UCT in 2018.

5.4 Summary of findings

This chapter presented the five threshold concepts (TC1–5) in the financial instruments module emerging from the data collected from focus groups and an interview with the Accounting lecturer. The threshold concepts were analysed and shown to possess weaker semantic gravity owing to the abstract nature of the concepts and stronger semantic density due to the complexity of the terminology. Lastly, student participants experienced varying degrees of troublesome knowledge and/or a transformed way of thinking when exposed to the threshold concepts. Triangulation of findings from the data collected and analysed showed a degree of consistency in the threshold concepts identified. Three of the four threshold concepts identified by the focus groups were also identified by the lecturer and some degree of troublesome knowledge was associated with all the threshold concepts. Troublesome knowledge in this research was

categorised as troublesome language, alien knowledge and conceptually difficult knowledge. Similar troublesome knowledge as a result of troublesome language appeared to be present for EDU and Mainstream students. At the time of the data collection, exposure to TC1, 4 and 5 resulted in transformation for six of the student participants. Further transformation may have occurred after the interviews were conducted with further exposure to the Accounting principles.

CHAPTER 6 SUMMARY OF RESEARCH

This chapter summarises the key findings emerging from this qualitative research into knowledge practices in a financial instruments module in a second-year Accounting course using the Threshold Concept Framework (Meyer & Land, 2005) and Legitimation Code Theory (Maton, 2014).

6.1 Summary of findings relating to three research questions

The three research questions which frames this research are:

Research question one: What are the threshold concepts in the financial instruments module?

Five threshold concepts emerged following the analysis of data from focus groups held with assistant lecturers and an interview with an Accounting lecturer:

1 The meaning of a 'financial instrument' as a concept (TC1).

2 Understanding the business model of an entity in the context of decisions relating to financial instruments (TC2).

3 The time value of money (TVM) principles (TC3).

4 The recognition and measurement of financial instruments (TC4).

5 Identifying the type of financial instrument (TC5).

This research suggests that the five threshold concepts identified in financial instruments represent a mechanism to understand knowledge practices in Accounting as they serve as "powerful claims to legitimacy" (Maton, 2014:24) which, in Accounting are mostly anchored in the IFRS. To enhance the validity of this study, an independent Accounting subject expert reviewed and confirmed the coding and identification of the threshold concepts identified in this research. The findings from the data analysis process also show that for each of the five threshold concepts identified, the student participants experienced a degree of knowledge experienced as troublesome stemming from alien knowledge, troublesome language and/or conceptually difficult knowledge.

The findings also revealed the interrelatedness and integration of the threshold concepts as seen in TC4 where proficiency in TC1–3 and 5 is required. This research argues that identification of the threshold concepts makes implicit knowledge explicit, as students are better equipped to develop their disciplinary knowledge if what is viewed as legitimate knowledge in Accounting is known.

Research question two: Using the threshold concepts identified in financial instruments, are semantic gravity and semantic density stronger or weaker?

Maton (2014) asserts that all knowledge practices comprise semantic gravity and semantic density, hence the necessity to consider both components in this research. The threshold concepts identified (research question one) were assessed as a collective given their integrated nature. The analysis showed that all five threshold concepts possess weaker semantic gravity and stronger semantic density (Figure 8). Weaker semantic gravity prevails as the threshold concepts in financial instruments are not anchored in context and represent abstract and general concepts. Stronger semantic density is inherent in the threshold concepts as the key terms are complex in nature and carry a distinct meaning in financial instruments.

For example, the term ‘financial instruments’ in the IFRS for SMEs and ‘business model’ are defined in IFRS, so the meaning of these terms in Accounting is strictly defined and their meaning does not alter according to the context in which they are used. Interestingly, the abstract nature of TC2 – *Understanding the business model of an entity in the context of decisions relating to financial instruments* was illuminated by student participant J (see section 5.3.1) who initially thought this threshold concept referred to general decisions a business makes as opposed to the context specific decisions pertaining to financial instruments.

Stronger semantic density is inherent in the threshold concepts due to the complexity of the terminology.

Research question three: Did the exposure to the threshold concepts in financial instruments result in troublesome knowledge and/or transformed understanding for ACI students?

Semi-structured interviews, a general survey and results from two objective tests formed the data collection for this research question. Analysis of the interview transcripts using In Vivo coding (Saldana, 2013) showed that most of the troublesome knowledge student participants experienced converged around the five threshold concepts (TC1–5). Student participants' responses demonstrated that most of the knowledge experienced as troublesome could be categorised as alien knowledge, troublesome language and/or conceptually difficult. The analysis also showed that while EDU students' first language was not English, similar troublesome knowledge also encountered as troublesome language was experienced by Mainstream students as seen with the term 'debenture'. There was no significant difference in troublesome language experienced by EDU and Mainstream students.

From a Discourse perspective, three student participants explicitly mentioned that limited exposure to financial instruments in their primary Discourse had influenced the troublesome knowledge experienced. This was particularly relevant for student participant L. For two student participants, encountering financial instruments due to her family's employment in academia (student participant N) and taking out a student loan (student participant P) signalled some degree of familiarity with the concept of financial instruments. However, student participant N's troublesome knowledge experienced was similar to other student participants with limited exposure to financial instruments.

The analysis of the interview transcripts demonstrated that a transformed understanding was mostly anchored in the meaning of a 'financial instrument' as a concept (TC1), the recognition and measurement of financial instruments (TC4) and the identification of the type of financial instrument (TC5). Analysis of the general survey results compared to the objective tests illustrated a transformed way of thinking and understanding for two student participants in relation to TC5. A comparison of Mainstream and EDU student participants' responses highlighted the varying degrees

of transformation after being exposed to the threshold concepts as part of the financial instruments module.

Interestingly, two EDU student participants indicated a transformed way of thinking in relation to TC1 – *The meaning of a 'financial instrument' as a concept* which may have emerged from their limited exposure to this concept in their primary Discourse. The student participants' responses on their transformed way of understanding were limited; this could be due to the timing of the interviews which occurred a month before examinations were held. The student participants may have required additional time to experience a significant conceptual shift in understanding and thinking about the threshold concepts. The way the module was taught may also have influenced the level of transformed understanding experienced by student participants.

6.2 Areas for future research

Using the TCF, three areas for future research could be conducted following the threshold concepts identified in the financial instruments module. First, the five threshold concepts identified in this research are not an exhaustive list. Future research may attempt to consider to explore whether the types of risks (credit risk, liquidity risk, cash flow risk, price risk) an entity might be exposed to as a result of holding or issuing financial instruments could also be threshold concepts. Other Accounting topics could also be analysed for the presence of threshold concepts. Second, a review of previous test and examination questions may demonstrate how summative assessment questions address content which this research identified as threshold concepts in financial instruments. Lastly, future research could identify how the pedagogy which is adopted can incorporate specific teaching and learning activities using scaffolding to overcome the troublesome knowledge experienced, using relevant and relatable South African examples. For example, using the National Student Financial Aid Scheme in South Africa (NSFAS) may assist students to understand how this financial aid granted for tertiary studies is a type of financial instrument, a 'loan'. Inspection of the contract between a student and NSFAS would illustrate the issuer and the holder of the 'loan'. Many students are familiar with NSFAS and this may assist in the scaffolding of the concept of a financial instrument.

Using LCT, future research could be conducted using the dimension of *Specialization* in LCT. The five threshold concepts emerging from financial instruments could be analysed using Specialization to ascertain to what degree the knower or the knowledge code (Maton, 2014) is privileged in Accounting.

6.3 Limitations of this study

At the time of this research, no studies on threshold concepts in financial instruments had been conducted and there is limited research in this area in the discipline of Accounting. The timing of the data collection exploring whether transformation of student participants' understanding and thinking was experienced when engaging with the threshold concepts in financial instruments may have impacted the findings from this line of inquiry. Further transformation could have been experienced after student participants engaged with the threshold concepts and acquired proficiency in preparation for the year-end examinations.

6.4 Conclusion

This research explored the knowledge practices in this financial instruments module through the five threshold concepts (TC1–5) identified using the Threshold Concept Framework (Meyer & Land, 2005) and Legitimation Code Theory (Maton, 2014). The data analysed shows how exposure to the threshold concepts resulted in varying degrees of troublesome knowledge and/or a transformed understanding for student participants interviewed. Using the dimension of Semantics in Legitimation Code Theory displays the abstract nature of the threshold concepts and highlighted the difficulties experienced with language through the dense and complex terminology embedded within the threshold concepts identified. Blackie (2014) asserts that language represents a stumbling block for students. This narrative was corroborated in this research through the student participants' troublesome knowledge experienced through troublesome language as seen in TC 1 and 5.

The findings emerging from this research demonstrate how an awareness of threshold concepts can assist lecturers in altering pedagogy so that implicit knowledge becomes explicit, which could assist students in acquiring mastery of the threshold concepts. Acknowledging students' primary Discourse and how this may influence the

disciplinary knowledge experienced as troublesome should prompt lecturers to be more mindful when scaffolding knowledge. Being aware of the knowledge experienced as troublesome and the transformed understanding experienced by students will enable lecturers to develop teaching and learning activities that are student-centred, which will enhance the likelihood of engagement and interaction in a classroom setting. While much research into knowledge practices in Accounting is still required, the findings from this study may be valuable in debates around curriculum reform and pedagogy in Accounting.

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Summary of appendices

Detail	Appendix
Appendix A	Interview questions for Assistant lecturers posed in focus groups
Appendix B	Interview questions for Accounting lecturer
Appendix C	General Survey questionnaire
Appendix D	Interview questions for student participants
Appendix E	Ethical clearance obtained for research from the School of Education Research Ethics Committee
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Appendix A – Questions for Assistant Lecturers in focus group setting

This study aims to:

- Identify the threshold concepts in **financial instruments** as part of the financial reporting II curriculum using **IFRS for SMEs** as a reporting framework *and* the Financial Reporting II syllabus as a frame of reference
- Identify the areas of **difficulty or challenges** experienced by students when constructing knowledge in financial instruments using IFRS for SMEs as the reporting framework

Your participation in this research is voluntary. You can choose to withdraw from the research at any time. This research has been approved by the School of Education Research Ethics committee.

Questions

1 Identify the **threshold concepts** in **financial instruments** using the IFRS for SMEs as the reporting framework *and* the Financial Reporting II syllabus as a frame of reference

2 Considering your answer to the question above, please explain the **troublesome knowledge** you encountered in financial instruments when you were enrolled for Financial Reporting II as a student?

3 Considering your answer to the threshold concepts that you identified in financial instruments, please explain which of the threshold concepts you identified as **transformative** to you?

Description of a threshold concept

A threshold concept is defined as “a portal opening up a new and previously inaccessible way of thinking about something” (Meyer & Land 2005:3) or “pivotal but challenging concepts in disciplinary understanding” (Meyer Land 2005:43). Without this understanding, a student cannot progress further with the knowledge construction process within a topic or discipline. Threshold concepts represent “critical portals” of a student’s understanding of a subject (Davies & Mangan, 2006:3).

Threshold concepts may contain the following characteristics: transformative, integrative, bounded, troublesome or irreversible. For the purposes of this research, the focus will be on: **transformative** and **troublesome** nature of a threshold concept (Meyer & Land, 2005).

Troublesome knowledge characteristic

Troublesome knowledge has also been described as knowledge that it difficult to grasp or difficult to “integrate into current understanding” (Rountree, Robbins & Rountree, 2013:266)

Transformative characteristic

Threshold concepts may lead to a **transformed** way of thinking as this may illustrate **how experts within a discipline think** about a phenomenon. Transformative characteristic “enables a student to be capable of understanding new concepts or solving different kinds of problems” (Knight et al., 2014:126) . Meyer and Land (2005:7) describe this transformation as a “significant shift in the perception of a subject”.

Appendix B – Questions for the Accounting lecturer

This study aims to:

- Identify the threshold concepts in **financial instruments** as part of the financial reporting II curriculum using **IFRS for SMEs** as a reporting framework *and* the Financial Reporting II syllabus as a frame of reference
- Identify the areas of **difficulty or challenges** and the **transformation** experienced by students when constructing knowledge in financial instruments using IFRS for SMEs as the reporting framework

Your participation in this research is voluntary. You can choose to withdraw from the research at any time. This research has been approved by the School of Education Research Ethics committee.

---

1 Identify the **threshold concepts** in **financial instruments** using the IFRS for SMEs as the reporting framework *and* the Financial Reporting II syllabus for financial instruments as a frame of reference

2 Are there any concepts in financial instruments (using the IFRS for SMEs as the reporting framework *and* the Financial Reporting II syllabus) that you find challenging or difficult to teach to students? Why?

3 In light of your answer to (1) above, please explain which of the threshold concepts **you** identified would you assess as being **transformative**?

Description of a threshold concept

A threshold concept is defined as “a portal opening up a new and previously inaccessible way of thinking about something” (Meyer & Land 2005:3) or “pivotal but challenging concepts in disciplinary understanding” (Meyer Land 2005:43). Without this understanding, a student cannot progress further with the knowledge construction process within a topic or discipline. Threshold concepts represent “critical portals” of a student’s understanding of a subject (Davies & Mangan, 2006:3).

Threshold concepts may contain the following characteristics: transformative, integrative, bounded, troublesome or irreversible. For the purposes of this research, the focus will be on: **transformative** and **troublesome** nature of a threshold concept (Meyer & Land, 2005).

Troublesome knowledge characteristic

Troublesome knowledge has also been described as knowledge that it difficult to grasp or difficult to “integrate into current understanding” (Rountree, Robbins & Rountree, 2013:266)

Transformative characteristic

Threshold concepts may lead to a **transformed** way of thinking as this may illustrate **how experts within a discipline think** about a phenomenon. Transformative characteristic “enables a student to be capable of understanding new concepts or solving different kinds of problems” (Knight et al., 2014:126) . Meyer and Land (2005:7) describe this transformation as a “significant shift in the perception of a subject”.

Appendix C – General survey for the students registered for Financial Reporting II in 2018

Purpose of this general survey

This survey will be utilised for research purposes to ascertain students' initial understanding of certain concepts in financial instruments. Furthermore, the research aims to identify the troublesome and transformation (Meyer & Land, 2005) experienced by students.

This estimated time to complete this survey is **5 minutes**. All responses from this survey will be utilised for research purposes only. Your identity will remain confidential. Should you wish to stop answering the survey questions at any point you will not be penalised. This survey is voluntary and will not impact your course mark for Financial Reporting II.

If you wish to partake in a follow up interview please leave your email address in point 6 of this questionnaire. Please note that should you participate in the interview your identity will be protected at all times and this information will be used for research purposes only. This research has been approved by the School of Education Ethics in Research Committee. Your participation in this research is voluntary. You can choose to withdraw from the research at any time.

---

1) **My responses can be used for research purposes**
    a. Yes
    b. No

<u>PART A – questions about you</u>

1) **Which degree are you currently registered for?**
    a. Business Science
    b. BCom
    c. Other (please specify)

2) **Are you an EDU student?**
    a. Yes

b. No

3) Do you consider English to be your…

a. 1st language?

b. 2nd language?

c. 3rd or 4th language?

4) Which ethnic group do you identify as?

a. African Black

b. Indian

c. White

d. Coloured

e. Other (please specify)

f. Prefer not to answer

5) Which gender group do you identify as?

a. Female

b. Male

c. Prefer not to answer

5) Are you first person in your family to be at university?

a. Yes. I am the first member in my family that attends university.

b. No, I am not the first member in my family that attends university.

6) Are you willing to participate in a follow up interview (45 minutes in duration)?

a. Yes (please include your UCT student email address)

b. No

PART B – a basic scenario to ascertain your initial understanding of certain concepts in financial instruments

The following four questions refer to the scenario below:

Sebenza (Pty) Ltd ('*Sebenza*') issued 1500 debentures with a par value of R175 each to Volt (Pty) Ltd ('*Volt*') on 1 March 2017. The debentures pay a coupon of 10% of the par value annually and the first payment commenced on 1 March 2018. The debentures will be redeemed for R195 on 1 March 2020. The effective interest rate is correctly calculated as 13.34%.

***Sebenza* has a trade receivables balance of R200 000.**

7) **The debentures issued and the 'trade receivables' balance are both examples of financial instruments**

   a. True
   b. False
   c. I don't know

(This question assessed TC1 – *The meaning of a 'financial instrument' as a concept*)

8) ***Sebenza* is the…….. of the debentures and *Volt* is the……. Of the debentures (fill in the blank space using the options below)**

   a. Sebenza is the holder of the debentures and Volt is the issuer of the debentures
   b. Sebenza is the issuer of the debentures and Volt is the holder of the debentures
   c. I don't know

(This question assessed TC5 – *Identifying the type of financial instrument*)

9) Sebenza (Pty) Ltd will recognise the debenture as…

a. An asset, and recognise interest income
b. A liability, and recognise interest expense
c. Equity, and recognise dividends
d. I don't know

(This question assessed TC4 – *The recognition and measurement of financial instruments*)

10) What does the coupon rate of 10% represent?

a. Interest income/expense
b. Cash payment/ receipt
c. I don't know

(This question assessed TC3 – *The time value of money principles*)

END OF GENERAL SURVEY

Appendix D – Questions for students participating in semi-structured interviews

This study aims to:

- Identify the threshold concepts in **financial instruments** as part of the financial reporting II curriculum using **IFRS for SMEs** as a reporting framework *and* the Financial Reporting II syllabus for financial instruments as a frame of reference
- Identify the areas of **difficulty or challenges** experienced by students when constructing knowledge in financial instruments using IFRS for SMEs as the reporting framework

Your participation in this research is voluntary. You can choose to withdraw from the research at any time. This research has been approved by the School of Education Research Ethics committee.

Introduction

1) **Please tell me a bit about yourself…Where did you grow up? How has your time at the University of Cape Town been? Why did you choose to study Bachelor of Commerce or Bachelor of Business Science?**

Course specific experience

2) **What aspect do you enjoy about Financial Reporting II?**

3) **What do you find most challenging or difficult about Financial Reporting II?**

Topic specific experience – probe threshold concepts

4) **You have just had two weeks of learning about Financial Instruments in Financial Reporting II…What were some of the most challenging or difficult concepts that you encountered in financial instruments?**

5) **Do you think your home life and lived experiences contributed to the challenges that you experienced when learning about financial instruments?**

6) **What do you think is the most transformation that you experienced in financial instruments?**

7) **In specific reference to the first and second objective test on financial instruments, what did you find challenging?**

Appendix E – Ethical clearance obtained from School of Education Research Ethics Committee

SCHOOL OF EDUCATION

Professor Azeem Badroodien

University of Cape Town, Private Bag, Rondebosch, 7701
Level 5, Neville Alexander Building, University South Avenue, Upper Campus
Tel: +27 (0) 21 650 2774 Fax: +27 (0) 21 650 3489
E-mail: Azeem.badroodien@uct.ac.za
Internet: www.education.uct.ac.za

Clearance number: EDNREC20180604 25th June 2018

Ms Mariam Bardien M.Ed Program University of Cape Town

Re: Ethical Clearance for Research Project

Dear Mariam

I am pleased to inform you that ethical clearance has been granted by the School of Education Ethics Review Committee of the Faculty of Humanities for your M.Ed research project entitled: *Decoding the knowledge in Financial Reporting II. Identifying threshold concepts in financial instruments and the transformative and troublesome knowledge as encountered by students*

We wish you all the best with your study.

Yours sincerely,

Signature Removed

Prof Azeem Badroodien Chair: School of Education Research Ethics Committee

"Our Mission is to be an outstanding teaching and research university, educating for life and addressing the challenges facing our society."

Appendix F – Consent Form for students partaking in interviews for audio recording and transcribing

Please fill in the slip below and indicate your willingness to have your responses audiotaped for my voluntary research project called:

"Knowledge practices in Accounting: Identifying threshold concepts in financial instruments and transformative and troublesome knowledge as encountered by African, Coloured and Indian students."

Your participation in this research is voluntary. You can choose to withdraw from the research at any time. This research has been approved by the School of Education Research Ethics committee.

Permission to have my responses to questions audiotaped and transcribed

I, _____

give/do not give* my consent to have the interview recorded.

[ ] I know that I may withdraw from the study at any time and that I will not be advantaged or disadvantaged in any way.

[ ] I know that the tapes will be destroyed between 3–5 years after completion of the project.

Your identity will remain anonymous. All responses will be for research purposes only. You can choose to withdraw from the research at any time.

Signature: _____ Date: _____

NAME

Contact details

Appendix G – Consent Form for lecturer/assistant lecturers partaking in interviews for audio recording and transcribing

Please fill and return the reply slip below and indicate your willingness to have your responses audiotaped for my voluntary research project called:

"Knowledge practices in Accounting: Identifying threshold concepts in financial instruments and transformative and troublesome knowledge as encountered by African, Coloured and Indian students."

This research has been approved by the School of Education Research Ethics Committee.

Permission to have my responses to questions audiotaped and transcribed

I, _____

give/do not give* my consent to have the interview recorded.

[ ] I know that I may withdraw from the study at any time and that I will not be advantaged or disadvantaged in any way.

[ ] I know that the tapes will be destroyed between 3–5 years after completion of the project.

Your identity will remain anonymous. All responses will be for research purposes only. You can choose to withdraw from the research at any time.

Signature: _____ Date: _____

NAME

CONTACT DETAILS

Consent Form for lecturer/assistant lecturers partaking in interviews for written responses to be used

Please fill in the reply slip below and indicate your willingness to have your written responses to be used for my voluntary research project called:

"Knowledge practices in Accounting: Identifying threshold concepts in financial instruments the transformative and troublesome knowledge as encountered by students."

This research has been approved by the School of Education Research Ethics Committee.

Permission to have my written responses to questions to be used for research purposes

I, _____

give/do not give* my consent to have my written responses used for research purposes only.

[ ] I know that I may withdraw from the study at any time and that I will not be advantaged or disadvantaged in any way.

[ ] I know that the responses will be destroyed between 3–5 years after completion of the project.

Your identity will remain anonymous. All responses will be for research purposes only. You can choose to withdraw from the research at any time.

Signature: _____ Date: _____

NAME

CONTACT DETAILS

Appendix H – Focus group participant and student participant coding

Participant in focus group	Detail
Participant A	Assistant lecturer in Accounting
Participant B	Assistant lecturer in Accounting
Participant C	Assistant lecturer in Accounting
Participant D	Assistant lecturer in Accounting
Participant E	Assistant lecturer in Accounting
Participant F	Assistant lecturer in Accounting
Participant G	Previous Financial Reporting II tutor now serving as Assistant Lecturer in Corporate Governance (Auditing)
Participant H	Previous Financial Reporting II tutor now serving as Assistant Lecturer in Taxation

Student participant in semi-structured interviews	Detail (EDU or Mainstream, Language, Race)
Student Participant J	EDU student, second language English, African Black
Student Participant K	Mainstream student, first language English, African Black
Student Participant L	EDU student, second language English, African Black
Student Participant M	EDU student, second language English, Coloured
Student Participant N	Mainstream student, first language English, Indian
Student Participant O	Mainstream student, first language English, African Black
Student Participant P	Mainstream student, first language English, African Black

Appendix I – Objective test 1: Assessment of threshold concepts

	FINANCIAL REPORTING II **(ACC2012W & ACC2112W)** **OBJECTIVE TEST 14 (Version A)** **WEEK BEGINNING 13 AUGUST 2018** **17 MARKS: 23 MINUTES**	**……%**
NAME:		
By ticking this box I give permission for my objective test results to be used for research purposes. I understand that my answers will remain anonymous. This research has been approved by the School of Education Research in Ethics Committee. Your participation in this research is voluntary. You can choose to withdraw from the research at any time. You will not be requested to supply any identifiable information, ensuring anonymity of your responses.		

There are three independent parts (Part A, B and C)

Part A

1) Identify which of the following are financial instruments (i.e. a financial asset, financial liability, or equity instrument in another entity), within the scope of the *IFRS for SMEs, Section 11*, *Basic Financial Instruments*:

(This question assessed TC1 – *The meaning of a 'financial instrument' as a concept* & TC5 – *Identifying the type of financial instrument*)

Financial instrument?	Answer: YES / NO	Give a short reason for your answer
Trade accounts payable		
Prepayments		

(4 marks)

Part B

Rentals Are Us (Pty) Ltd entered into a finance agreement with Prime Bank to buy a property. The loan is repayable in eight equal payments of R750 000, payable annually in arrears. The loan carries and interest charge of 12% per annum, compounded **annually**.

Required:

(This question assessed TC5 – *Identifying the type of financial instrument*)

1. Who is the issuer of the loan? **(1 mark)**

2. Who is the holder of the loan? **(1 mark)**

3. How much did Rentals Are Us (Pty) Ltd **initially** borrow? **(2 marks)**

(This question assessed TC3 – *The time value of money (TVM) principles*)

4. Prime Bank is offering a special savings account with a 7% per annum interest, compounded monthly. If you deposit R 12 000 today in such a special savings account with Prime Bank, what will be the balance of your account at the end of 20 years? **(2 marks)**

(This question assessed TC3 – *The time value of money (TVM) principles*)

Part C

On 1 July 2016, *Calvert (Pty) Ltd* ('*Calvert*') purchased 150 class A shares in Sprout Ltd for R25 per share. The Class A shares of Sprout Ltd are listed on the Johannesburg Stock Exchange. This share purchase was part of an Initial Public Offering (IPO). Transaction costs of R1500 were incurred by Calvert. Calvert intends to hold the shares to realise fair value gains and losses through trading.

Calvert uses the International Financial Reporting Standards ("Full IFRS") and has a **31 December year end**.

Information about the share price of Sprout Ltd is provided as follows:

	R
Share price – Transaction date 1 July 2016	25
Share price – 31 December 2016	23
Share price – 31 December 2017	25

1. **Calvert (Pty) Ltd** should classify the investment in Sprout Capital Ltd at initial recognition at… **(1 mark)**

   a. Cost less impairment

   b. Fair value through profit or loss

   c. Present value of future cash flows

   d. None of the above

(This question assessed TC4 – *The recognition and measurement of financial instruments*)

2. Briefly explain a reason for your answer to question (1) above in reference to Calvert's business model. **(3 marks)**

(This question assessed TC2 – *Understanding the business model of an entity in the context of decisions relating to financial instruments*)

3. **Show** how the information related to the purchase of shares in Sprout would be presented in the Statement of Financial Position and the Statement of Comprehensive income of **Calvert (Pty) Limited** for the year ended **31 December 2016**. Ignore accounting policies, note disclosure, comparative information, Statement of Cash Flows, the Statement of Changes in Equity and any effect on Retained earnings and bank. **(3 marks)**

(This question assessed TC5 – *The recognition and measurement of financial instruments*)

Formulas:

$FV = PV (1 + r)^n$ *OR* $PV = FV (1 + r)^{-n}$

$$FVA = CF \times \frac{(1+r)^n - 1}{r}$$

$$PVA = CF \times \frac{1 - 1/(1+r)^n}{R}$$

$(AER + 1)1 = (1 + r/m)m$ = AER = $(1 + r/m)m - 1$

	FINANCIAL REPORTING II **(ACC2012W & ACC2112W)** **OBJECTIVE TEST 14 (Version B)** **WEEK BEGINNING 13 AUGUST 2018** **17 MARKS: 23 MINUTES**	**……%**
NAME:		
By ticking this box I give permission for my objective test results to be used for research purposes. I understand that my answers will remain anonymous. This research has been approved by the School of Education Research Ethics Committee. Your participation in this research is voluntary. You can choose to withdraw from the research at any time. You will not be requested to supply any identifiable information, ensuring anonymity of your responses.		

There are three independent parts (Part A, B and C)

Part A

1.Identify which of the following are financial instruments (i.e. a financial asset, financial liability, or equity instrument in another entity), within the scope of the *IFRS for SMEs, Section 11*, *Basic Financial Instruments*:

(This question assessed TC1 – *The meaning of a 'financial instrument' as a concept & TC5 – Identifying the type of financial instrument*)

Financial instrument?	Answer: YES / NO	Give a short reason for your answer
Trade Receivables		
VAT receivable from SARS		

(4 marks)

Part B

Storage Units (Pty) Ltd entered into a finance agreement with Green Bank to buy a property. The loan is repayable in ten equal payments of R975 000, payable annually in arrears. The loan carries and interest charge of 13% per annum, compounded **annually**.

(This question assessed TC5 – *Identifying the type of financial instrument*)

Required:

1. Who is the holder of the loan? **(1 mark)**

2. Who is the issuer of the loan? **(1 mark)**

3. How much did Storage Units (Pty) Ltd **initially** borrow? **(2 marks)**

(This question assessed TC3 – *The time value of money principles*)

4. Prime Bank is offering a special savings account with an 8% per annum interest, compounded monthly. If you deposit R 25 000 today in such a special savings account with Prime Bank, what will be the balance of your account at the end of 15 years?

(2 marks)

(This question assessed TC3 – *The time value of money principles*)

Part C

On 1 January 2016 Tiger *(Pty) Ltd* ('Tiger') purchased 250 Class A shares in Baleka Capital Limited which is listed on the Johannesburg Stock Exchange. This share purchase was part of an Initial Public Offering (IPO). Transaction costs of R1 700 were incurred by *Tiger*. *Tiger* intends to hold the shares to realise fair value gains and losses through trading.

Tiger uses the International Financial Reporting Standards ("Full IFRS") and has a 31 December year end.

Information about Sprout Limited's share prices is provided as follows:

	R
Share price – Transaction date 1 January 2016	15
Share price – 31 December 2016	18
Share price – 31 December 2017	22

1. **Tiger (Pty) Ltd** should measure the investment in Baleka Capital Ltd at…**(1 mark)**

a. Cost less impairment

b. Fair value through profit or loss

c. Present value of future cash flows

d. None of the above

(This question assessed TC4 – *The recognition and measurement of financial instruments*)

2. Briefly explain a reason for your answer to question (1) above in reference to the business model. **(3 marks)**

(This question assessed TC2 – *Understanding the business model of an entity in the context of decisions relating to financial instruments*)

3. **Show** how the information related to the purchase of shares in Baleka Capital would be presented in the Statement of Financial Position **and** the Statement of Comprehensive income of Tiger (Pty) Limited for the year ended **31 December 2016**. Ignore accounting policies, note disclosure, comparative information, Statement of Cash Flows, the Statement of Changes in Equity and any effect on retained earnings and bank. **(3 marks)**

(This question assessed TC4 – *The recognition and measurement of financial instruments*)

Appendix J – Objective test 2: Assessment of threshold concepts

	FINANCIAL REPORTING II **(ACC2012W & ACC2112W)** **OBJECTIVE TEST 15 (Version A)** **WEEK BEGINNING 20 AUGUST 2018** **15 MARKS: 20 MINUTES**	**……%**
NAME:		
By ticking this box I give permission for my objective test results to be used for research purposes. I understand that my answers will remain anonymous. This research has been approved by the School of Education Research Ethics Committee. Your participation in this research is voluntary. You can choose to withdraw from the research at any time. You will not be requested to supply any identifiable information, ensuring anonymity of your responses.		

Presto Limited ('*Presto*') issued 1 500 000 Class D shares at R12 each, on **1 January 2016**. The Class D shares are classified as shares with no voting rights, with a fixed dividend (coupon) of 7, 5% p.a., and are mandatorily redeemable on **31 December 2023** at a premium of 10% above the principal value. Transaction costs amounted to R50 000. Dividends are payable on 31 December.

The effective interest rate applicable to these Class D shares is 8,47% p.a.

Presto has a **30 June** year end.

REQUIRED:

1. **Briefly discuss** whether the **Class D** shares issued by Presto would be classified as debt or equity instruments by Presto Limited in its financial statements.

(6 Marks)

(This question assessed TC5 – *Identifying the type of financial instrument*)

2. **Show** the **inputs** you would use on a financial calculator in order to calculate the effective interest rate of 8, 47% relating to the Class D shares issued by Presto Limited. **(3 Marks)**

(This question assessed TC3 – *The time value of money principles*)

3. Show how the information relating to the Class D shares issued by presto would be presented in the **Statement of Financial Position**, **Statement of Comprehensive Income** and **Statement of Cash Flows** of Presto Limited for the year ending **30 June 2018**. You are not required to show any note disclosure, comparatives, effect on bank account and retained earnings **(6 Marks)**

(This question assessed TC 3 – *The time value of money principles* & TC4 – *The recognition and measurement of financial instruments*)

	FINANCIAL REPORTING II **(ACC2012W & ACC2112W)** **OBJECTIVE TEST 15 (Version B)** **WEEK BEGINNING 20 AUGUST 2018** **15 MARKS: 20 MINUTES**	**……%**
NAME:		
By ticking this box I give permission for my objective test results to be used for research purposes. I understand that my answers will remain anonymous. This research has been approved by the School of Education Research Ethics Committee. Your participation in this research is voluntary. You can choose to withdraw from the research at any time. You will not be requested to supply any identifiable information, ensuring anonymity of your responses.		

Fresto Limited ('*Fresto*') issued 900 000 Class E shares at R7 each, on **1 January 2016**. The Class E shares are classified as shares with no voting rights, with a fixed dividend of 5% p.a., and are mandatorily redeemable on **31 December 2025** at a premium of 8% above the principal value. Transaction costs amounted to R30 000. Dividends are payable on 31 December.

The effective interest rate applicable to these Class E shares is 5,68% p.a.

Fresto has a **30 June** year end.

REQUIRED:

1. **Briefly discuss** whether the **Class E** shares issued by Fresto would be classified as debt or equity instruments by Fresto Limited in its financial statements.

(6 Marks)

(This question assessed TC5 – *Identifying the type of financial instrument*)

2. Show the **inputs** you would use on a financial calculator in order to calculate the effective interest rate of 5,68% relating to the Class E shares issued by Fresto Limited. **(3 Marks)**

(This question assessed TC3 – *The time value of money principles*)

3. Show how the information relating to the Class E shares issued by Fresto Limited would be presented in the **Statement of Financial Position**, **Statement of Comprehensive Income** and **Statement of Cash Flows** of Fresto Limited for the year ending **30 June 2018**. You are not required to show any note disclosure, comparatives, effect on bank account and retained earnings. **(6 Marks)**

(This question assessed TC3 – *The time value of money principles* & TC4 – *The recognition and measurement of financial instruments)*