NON-MAJOR ACCOUNTING STUDENTS' LEARNING IN A THRESHOLD CONCEPTS-INSPIRED TUTORIAL PROGRAMME

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SUPERVISOR'S PERMISSION TO SUBMIT

I, Professor S. M. Maistry, the abovementioned student's supervisor, agree to the submission of this thesis.

Signature

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Date

DECLARATION

I, Sasha Padayachi, declare that:

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MY PARENTS, THAVAN AND KOGIE
AND MY GREY AND WHITE RABBIT, *BUBBLES*.

IN LOVING MEMORY OF
MY BLACK AND WHITE RABBIT, *SWEETY*.

ABSTRACT

Accounting 101 classrooms at universities in South Africa typically consist of large class numbers with both major and non-major accounting students. The students who are majoring in the discipline of accounting have elected to study accounting and qualify as chartered accountants or a similar profession. The students who are not majoring in the discipline of accounting have had accounting imposed upon them as a compulsory discipline in their chosen programmes. Historically, the pass rates and class averages in these classes are low, both internationally (Hove et al., 2010; McGee, Preobragenskaya, & Tyler, 2004) and in South Africa (du Plessis, Muller & Prinsloo, 2005).

The pedagogy, curriculum, assessment style and the delivery of the accounting discipline have been designed with the competencies required by the South African Institute of Chartered Accountants (SAICA). The challenge inherent in this mixed classroom bears reference: as resources were limited, discipline experts were unable to provide non-major accounting students who do *not* want to become chartered accountants or those students who possessed an aversion to the discipline, with a design relevant to their specifications.

This challenge necessitated a deeper understanding of non-major accounting students' learning, as well as those students who possessed an aversion to the discipline, as their performance may contribute to the failure rate. This further necessitated the utilisation of possible innovative methods in order to assist students who do not wish to specialise in accounting in a South African context. The purpose of this study was to investigate the ways in which non-major accounting students experienced the learning of Accounting 101 in a tutorial programme based on the Threshold Concepts Theory. This innovative method was used to attempt to assist students to overcome the conceptual as well as the emotional barriers to their learning of Accounting 101, and to therefore think *like an accountant,* the purpose of the Threshold Concepts Theory.

The qualitative methodology that was used is called Interactive Qualitative Analysis (IQA) and consisted of a two-phased methodology: focus groups and the use of semi-structured interviews to validate the results of the focus group phase. This qualitative study was informed by the principles of social constructivism, where the construction of knowledge and skills is a social process (Lucas, 2000). The learning paradigm or worldview that the Threshold Concepts Theory propounds is also that of social constructivism (Meyer & Land, 2008). The IQA analysis provided a Systems Influence

Diagram (SID), which is a graphical representation of the themes or affinities that emerged during the learning journey of the participants. The holistic approach to learning adopted by the participants drove the entire study and influenced how effectively the participants interacted with the Accounting 101 threshold concepts tutorial questions. The design of these tutorial questions also influenced the challenging dynamics of the discipline content. The challenges found within the discipline content influenced the learning experiences of the participants, and in turn resulted in two 'super-affinities' that addressed the conceptual and emotional barriers to learning.

The concept of 'interprogramminarity' was created for this study, which describes research conducted amongst programmes that housed the same discipline, namely, Accounting 101, for this study. This concept will allow discipline experts to use the tentative framework provided to teach non-major accounting students to think in the discipline when they embark on their learning journey. The framework also suggested that the personality traits of the students should be assessed prior to and upon completion of their learning journey, using the Myers-Briggs Type Indicator, so that students could be aware of which quadrant of the Eysenck Personality Theory they belonged to, and if there was any change when they mastered the discipline.

ABBREVIATIONS

SAICA	South African Institute of Chartered Accountants
TCT	Threshold Concepts Theory
TC	Threshold Concepts
tc	threshold concepts
ITCK	Integrated Threshold Concept Knowledge
ETC	Embedding Threshold Concepts
IQA	Interactive Qualitative Analysis
COVID-19	Coronavirus Disease and pandemic
PsyCap	Psychological Capital
MBTI	Myers-Briggs Type Indicator
TQM	Total Quality Management
ART	Affinity Relationship Table
IRD	Inter Relationship Diagram
SID	Systems Influence Diagram
SOLO	Structure of Observed Learning Outcomes

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CHAPTER ONE
INTRODUCTION

1.1 Introduction

Background, Context and Rationale

Accounting 101 classrooms at universities in South Africa typically consist of large class numbers with both major and non-major accounting students, who are either learning Accounting 101 for the first time or who have studied accounting in their schooling careers. Historically, the pass rates and class averages in these classes are low, both internationally (Hove et al., 2010; McGee et al., 2004) and in South Africa (Du Plessis et al., 2005). The South African Institute of Chartered Accountants (SAICA) is the professional accounting body that requires students to study a Bachelor of Commerce in Accounting or the equivalent degree programme, at a SAICA accredited university, in order to qualify as a chartered accountant in South Africa.

This particular phenomenon has piqued my interest as such a classroom comprised of a mixture of two types of students in their first year of university study. The first type has elected to study accounting and qualify as chartered accountants or a similar profession and are those students who are majoring in the discipline of accounting. The second type has had accounting imposed upon them as a compulsory discipline in their chosen programmes and are those students who are *not* majoring in the discipline of accounting. The discipline experts who have taught the discipline of Accounting 101 hailed from the Bachelor of Commerce in Accounting programme. These discipline experts have designed the pedagogy, curriculum, assessment style and its delivery, with the competencies required by SAICA in order to become a chartered accountant. The challenge inherent in this classroom was that resources were limited and discipline experts were therefore unable to provide an additional and equal focus regarding the design applicable to the non-major accounting students who do not want to become chartered accountants, or for those students who possessed an aversion to the discipline.

This challenge necessitated a deeper understanding of non-major accounting students' learning of the discipline of Accounting 101, including those who possessed an aversion towards accounting, both of which may contribute to the failure rate. This further necessitated the utilisation of possible innovative methods in order to assist students who do not wish to specialise in accounting in a South African context. The purpose of this study was to investigate the ways in which non-major accounting students experienced the learning of Accounting 101 in a tutorial programme based on the Threshold Concepts Theory.

Research Problem

The research problem emanated from the practical problem outlined above. It focused on the gaps in the field of research this study was investigating. There is a lack of understanding regarding how students engaged with a compulsory discipline that they have no intention of majoring in, but which they needed in order to complete their chosen programme. There is also insufficient literature for discipline experts to draw on to address how to support the teaching of this type of student group at university level. The gap this study therefore aspired to fill, was to utilise an innovative method in order to understand how this student group embraced, or did not embrace, the learning of a non-major discipline and to then develop a framework describing how the teaching of this student group may be approached.

The research questions for this study were as follows:

- How do non-major accounting students learn Accounting 101 in a tutorial programme based on the Threshold Concepts Theory?
- Why does learning happen in this way?

Significance

The significance of this study was in determining how this student group responded to the innovative method implemented throughout their learning journey, and if there was a transformation in the way the students thought and in their personality traits. This possible transformation would allow for the development of a framework to understand how non-major students learn the subject under scrutiny. This framework would then allow discipline experts teaching these disciplines, to redesign the curriculum in order to accommodate non-major learning at university level. A further level of significance would be in determining if the

historical negative preconceptions possessed by non-major students were still prevalent today, and if the innovative method could be used as a means to eliminate these views.

Rationale

From as early as the 1960s, the accounting profession and accountants have been associated with feelings of deep-seated negativity. A study consisting of accounting and non-major accounting students indicated that both groups perceived the profession to possess a high status despite low esteem, perhaps as a result of sociological and historical factors (Fisher & Murphy, 2006). The group of non-major accounting students in the study, however, exhibited a natural aversion to the accounting profession and viewed the accountant as dull, boring and unethical. The perceptions any one individual develops can be attributed to social information gathered from sources such as news clips, magazines, movies, and word of mouth. The age-old label of a "boring bean counter" aptly described the stereotype created by this social information, bringing with it a sense of limited creativity and interest (Azevedo & Sugahara, 2012). The incidences of fraud and failure over the years have also brought much disrepute to the profession (Azevedo & Sugahara, 2012), despite accountants traditionally being seen as highly ethical in their field (Azevedo & Sugahara, 2012).

Studies conducted in other disciplines that used numeracy, such as first-year statistics, indicated that students exhibited anxiety towards numeracy, which raised additional issues of low attendance, limited engagement and an overall lack of motivation (Khan, 2014; Mkhize & Maistry, 2017). Students' failure to perceive the relevance of numeracy in their academic programme (Meyer et al., 2010), resulted in, for example, the disciplines of mathematics and statistics being viewed as disconnected from their programme. In addition to the anxiety that some students possessed towards a discipline prior to entering the classroom, they may also possess preconceptions pertaining to troublesome concepts (Meyer et al., 2010) in that particular discipline.

Theoretical Framework

The theoretical framework that was utilised for this study is called the Threshold Concepts Theory. The term 'threshold concepts' originated from two economists, Erik Meyer and Ray Land in 2003, from a United Kingdom research project. This project looked at strengthening the classroom environment, specifically the teaching and learning dynamic. Meyer and Land held that specific concepts, which they termed 'threshold' specific concepts, in the discipline of economics, were "central to the mastery" of their discipline as they had "certain features in common" (Cousin, 2006, p. 4). Five key features or characteristics of a threshold concept were identified by Meyer and Land and two new characteristics were subsequently added: 'transformative', 'irreversible', 'integrative', 'bounded', 'troublesome knowledge', 'constitutive' and 'discursive' (Land et al., 2016, p. 53). A student's everyday understanding of a concept can prevent the mastery of threshold concepts. Attempting to get students to alter their everyday understanding can be an emotional journey that provides great discomfort (Cousin, 2006).

The development of the Threshold Concepts Theory in 2003 has provided discipline experts with a teaching and learning tool that is now being recognised as "pedagogically fertile" for the future of their classrooms (Meyer & Land, 2005, p. 374). This development moved away from the teacher-centred approach adopted at SAICA accredited universities (Hesketh, 2011; Van der Merwe et al., 2014) towards a more student-centred approach that focused on students' learning strategies and understanding (Meyer et al., 2010). In the past, departments of accounting at SAICA accredited universities have focused solely on the professional training of future chartered accountants and have omitted a research focus. There have been recent developments that take this oversight into account. One of these developments required a graduate to possess research skills and further to that, required graduates to be taught Accounting Theory that encouraged "logical and analytical thinking" as well as "powers of reasoning" (Van der Schyf, 2008, p. 2). This development in turn forced the departments of accounting to research their pedagogical practices so as to better understand the learning experiences of their students in order to ensure that they possessed these critical skills. The Threshold Concepts Theory allowed discipline experts to link their teaching to this much needed research focus. Teacher-centredness and student-centredness created an environment that separated research from teaching as the dialogue is one-sided. A new inclusive paradigm, transactional curriculum inquiry, promoted an environment where both discipline experts and students, as well educational researchers, shared dialogues and co-inquiry.

There has been some research conducted internationally in the field of the Threshold Concepts Theory for the discipline of Accounting 101. These studies have implemented a variety of methodologies and methods. Researchers who wanted to conduct a threshold concepts analysis of troublesome accounting specific content, asked students to classify this discipline content as either a threshold concept or a threshold conception, using the method of thinking out loud during interview sessions so as to grasp their initial thoughts on the questions asked (Meyer et al., 2010). Discipline experts in the field of accounting were asked to identify what they thought the threshold concepts of the discipline were by means of semi-structured interviews. Upon completion of the semi-structured interviews, the data collected was corroborated by asking the students the same questions the discipline experts were subjected to in their semi-structured interviews (Magdziarz, 2016). Students had to provide written and oral accounts of discipline-specific assessments that would allow the researcher to direct their attention to the students' understanding of accounting based on assessments attempted as part of a phenomenographic study (Meyer & Land, 2006). The method of autoethnography, with the processes of self-reflection and writing, were used to explain the apprehension with an external view of the discipline of accounting and the internal view when personally teaching accounting, in order to counter these challenges (Lucas, 2011).

The application of the Threshold Concepts Theory to teach Accounting 101 has not gained traction in South Africa to date. As a result, there has been limited scholarship in this area. The purpose of this study was to understand, as per the interpretivist paradigm chosen, how non-major accounting students learn Accounting 101 in a tutorial programme designed using the Threshold Concepts Theory, with the chosen methodology of Interactive Qualitative Analysis (IQA). The significance of the study was to improve the teaching and learning component, as well as to redesign the curriculum of the discipline in accordance with the threshold concepts implemented, specific to that of non-major accounting students.

1.2 Alice in Wonderland

The word used to describe the threshold concepts learning journey is 'liminality'. The Threshold Concepts Theory used the term liminality to describe the place in which a student learns how to master a threshold concept (Meyer & Land, 2006). Liminality can be traced back to Vygotsky's (1978) teachings that spoke about taking a student from what they know to what

they can know. Victor Turner has defined the liminal space as the bewildering "betwixt and between" space (Meyer et al., 2010, p. 282).

Liminality can be likened to that of Lewis Carroll's Alice, from *Alice in Wonderland*, falling down the rabbit hole. Alice had preconceptions before entering the rabbit hole, the pre-liminal phase of learning. Accounting 101 students, just like Alice, have preconceptions before entering the classroom. These are generally negative preconceptions (Azevedo & Sugahara, 2012) or negative emotions that they encounter in the pre-liminal phase. Once Alice entered the rabbit hole, she had to navigate her way down the rabbit hole, or the liminal phase of learning. Unfortunately, the liminal phase, the phase after the pre-liminal phase, also involved students encountering negativity, as they are presented with troublesome knowledge, one of the characteristics of the Threshold Concepts Theory. This knowledge could be troublesome conceptually as well as emotionally for students (Land et al., 2016).

Liminality can be used to refer to the oscillation between the safety the student feels in the familiar space, and the discomfort the student feels in the unfamiliar new space. Students who found themselves stuck in the pre-liminal space will not be as susceptible to oscillate to the liminal space, and will therefore remain stuck (Meyer et al., 2010) with a limited understanding of the discipline. Threshold Concepts theorists have prided themselves on creating a safe space or supportive "holding environment" for students in order for them to navigate through, when they encounter troublesome knowledge during the liminal phase of learning. Learning in itself, is a type of identity work that allows us to draw our attention to the affective aspect of learning in a Threshold Concepts environment (Cousin, 2008, p. 63). The hope of researchers was to create supportive and safe liminal spaces in which discipline experts can formulate ways to assist students to overcome both the conceptual as well as the emotional barriers to learning (Meyer & Land, 2006).

There has been some research conducted to overcome conceptual trouble encountered within a discipline. A discipline expert used an instrument to encourage students to commence by using informal discourse until they were comfortable and ready for the discipline expert to facilitate the translation of the student's discourse to a more formal one (O'Mahony et al., 2014). Some discipline experts adopted a "listening for understanding" approach to their teaching in order to better understand their students (Meyer & Land, 2006, p. 200). Other discipline experts recontextualised their perceptions (Meyer et al., 2010), upon the realisation

that their students possessed misconceptions regarding the disciplinary content. Some discipline experts have employed a "teaching-focus" with repetition of the same threshold concepts over time (Harlow et al., 2014, p. 62), in order to help students to grasp troublesome discipline knowledge. Discipline experts have also provided their students with a learning space to reflect upon and evaluate their specific learning position over their learning journey (Meyer, 2008).

There has been some research conducted to overcome emotional trouble encountered within a discipline. Discipline experts have acknowledged that the negative perceptions that students possessed regarding the discipline content needed to be addressed by the discipline experts (Meyer et al., 2010). Discipline experts recognised that they will also need to identify which students are scared and possessed an emotional barrier to learning. Researchers have found that this "preconceptual threshold" can be overcome as discipline experts have acknowledged that students needed to engage in an exercise of the reflection of their learning journey upon the completion of the discipline, in order to identify the emotional barriers to learning (McGuigan & Weil, 2010).

If discipline experts do create these safe spaces or supportive liminal holding environments, then the student should acquire a transformed way of understanding of the discipline content (Fortune et al., 2012). If, however, students appear to be stuck in the liminal space, with a limited understanding of the discipline content, then they will not be able to "think in the subject" (Meyer, 2008, p. 183). The means that were formulated in order to assist students to overcome the conceptual and emotional barriers to their learning of Accounting 101, and to therefore think like an accountant, emerged by creating a threshold concepts tutorial programme.

1.3 Conceptual Trouble: Using the Threshold Concepts Tutorial Programme to Think Like an Accountant

Threshold Concepts Tutorial Programme

Researchers have acknowledged the need for accounting discipline experts to employ innovative methods of assessment that not only confronted the negative preconceptions of the discipline, but also promoted an environment that allowed students develop the ability to

interact with people and data in order for them to achieve academic success (McGuigan & Kern, 2010). Discipline experts from Staffordshire University, in the field of economics, were the first to undertake a project aimed at creating a set of tutorial questions that incorporated threshold concepts. The Embedding Threshold Concepts (ETC) project utilised scenarios from everyday life in order to determine whether a student's thinking had transformed to that of an economist (Meyer & Land, 2006). A prior study utilising tutorial questions infused with threshold concepts to investigate student learning has been conducted in the discipline of economics in the second year of study (Schroenn Goebel, 2017). An extensive search for tutorial questions that incorporated Accounting 101 threshold concepts as well as those for other disciplines has been conducted, and none have been found to date. As such, an analysis of the learning outcomes was conducted in order to determine what I deemed to be Accounting 101 threshold concepts. The ETC project was utilised as a basis for creating tutorial questions infused with these threshold concepts specific to Accounting 101. The everyday life scenarios incorporated into the tutorial questions were used to determine if the students' thinking had transformed, resulting in them thinking like an accountant when faced with these everyday life accounting problems.

The innovation offered to assist students to think like an accountant was the amalgamation of the ETC practice-theory connection, in addition to the practice-theory-practice connection (Hedges, 2014) with the purpose of a fairy tale (Miley, 2005), in addition to the continued use of an actual fairy tale throughout my study, *Alice in Wonderland*. Stories or fairy tales date back to primitive times and have been used as a method to communicate two levels of meaning (Miley, 2005). The story-oriented tutorial questions implemented in the study were based on the everyday life interpretation of the White Rabbit from the fairy tale *Alice in Wonderland*, and real-life pet rabbits. This design was deemed to be an innovative and appropriate enough method of assessment that would allow for a smoother transition with something familiar, both *Alice in Wonderland* and rabbits, towards something unfamiliar about which students already possessed negative preconceptions, Accounting 101. These everyday life stories about actual rabbits were a method of assessment used to communicate two levels of meaning to the students, which are elaborated on in Chapter Four.

1.4 Emotional Trouble: Using the Threshold Concepts Tutorial Programme to Traverse the Affective Journey During the COVID-19 Pandemic

The third concept of the theory by Timmermans and Meyer in 2016 related to emotion and motivation. The negative preconceptions experienced in the pre-liminal phase of learning is the commencement of the emotions felt by Accounting 101 students prior to entering the classroom. Students will then encounter troublesome knowledge in the liminal phase of learning. 'Troublesome knowledge' is one of the characteristics of a threshold concept. With these five forms of troublesome knowledge comes the troublesome affect, the emotional side that is experienced as a result of it.

The President of South Africa announced that the country will be subject to a lockdown, commencing 26 March 2020 from midnight, in order to contain the spread of the coronavirus disease (COVID-19). After much consideration regarding the constraints faced during the face-to-face environment, the study was then redesigned using online platforms to interact with the participants in order to generate and collect data via these platforms. This study aspired to use the context of COVID-19 as an opportunity to design the online platforms to facilitate the teaching and learning of troublesome knowledge in the absence of the traditional face-to-face environment (de la Harpe & Mason, 2014; Westergaard & Wiewiura, 2015). As the study was redesigned to be conducted during an uncertain time, not using the conventional face-to-face protocol, the students who volunteered to participate did so because of their own self-motivation. The design and administration of the tutorial programme was conducted in the most accessible approach possible in order to promote an environment of continuous self-motivation. The data collection and data analysis of the chosen methodology also had to be adapted to be conducted using online platforms for the first time. This provided the study with the opportunity to expand on the semi-structured interview questions by considering how the lockdown emotionally impacted the participants and how they were motivated to study during the lockdown using a newly-designed online platform.

Effective learning, like the first concept of the theory by Timmermans and Meyer in 2016, can be likened to that of the intentional choice of a student to learn, making it that of deep learning. The improvement of learning is determined by student motivation. This motivation results in students possessing the self-esteem to learn independently, in a student-driven learning environment. The knowledge acquired by these motivated students is deeply used by the

application thereof. This means of learning is in line with that of constructivism, that allowed students to create upon the knowledge received (Biggs, 1999), as well as that of Threshold Concepts Theory learning that offered the prospect of promoting deep learning (Shanahan et al., 2016).

The Self-Efficacy Theory of Motivation was utilised when analysing one of the concepts found in the theoretical framework, being that of 'motivation'. The self-construct of 'self-efficacy' is found in the Self-Efficacy Theory of Motivation (Bandura, 2010; Bandura & Walters, 1977). This self-construct of self-efficacy is also one of four factors found in the construct of Psychological Capital (PsyCap): those of 'hope', 'efficacy', 'resilience' and 'optimism' (Luthans et al., 2007). The Myers-Briggs Type Indicator (MBTI) was used in conjunction with the limited Psychological Capital (PsyCap) research conducted to date. Prior research has indicated that emotional intelligence and the Myers-Briggs Type Indicator have a strong relationship (Higgs, 2001). Emotional capital, a set of assets, usually experience or age, and used to process emotional capital (Meyer & Land, 2006), is imperative for a student to encounter a reduced degree of discomfort from troublesome discipline content. The Myers-Briggs Type Indicator described sixteen possible personality types based on four psychological processes, sensing, intuition, thinking and feeling, as well as two attitudes exhibited, extraversion and introversion (McCaulley & Martin, 1995). Despite the popularity of the Myers-Briggs Type Indicator, researchers have also identified limitations (Boyle, 1995) inherent with the use of the instrument and have also indicated that it should not be utilised for career planning. Nevertheless, the Myers-Briggs Type Indicator is popularly implemented for uses unrelated to its validity and reliability (Pittenger, 1993a). This study elected to use this instrument to assess the personality of each of the participants prior to the commencement of the threshold concepts tutorial programme and the implementation of the chosen methodology, Interactive Qualitative Analysis (IQA). The personality of each of the participants upon the completion of the study was also assessed in order to determine if there were any changes to their personality that could be attributed to how the participants learned Accounting 101 in a threshold concepts environment, in a newly-designed online platform, during the COVID-19 pandemic.

1.5 Research Methods

Qualitative Research

The reason that this study used qualitative research is because Accounting 101 studies have predominantly used quantitative research methodologies. Prior Accounting 101 studies that have used qualitative research and the theory chosen, the Threshold Concepts Theory, have employed the use of semi-structured interviews. The qualitative methodology used is called Interactive Qualitative Analysis (IQA) and consisted of a two-phased methodology: focus groups and the use of semi-structured interviews to validate the results of the focus group phase. This qualitative study was informed by the principles of social constructivism, the construction of knowledge and skills as a social process (Lucas, 2000). The learning paradigm or worldview that the Threshold Concepts Theory is located in, is social constructivism (Meyer, 2008). The constructivist paradigm postulates that truth is deemed to be relative as it depends on one's own subjective perspective, allowing meaning to be created (Baxter & Jack, 2008). In this study, the principle of interpretivism as the approach to research is used in an attempt to deeply understand the phenomenon. The purpose of qualitative research is to gain a deep understanding of human behaviour in its natural environment and the reasons for this behaviour. Qualitative research involves studying this human behaviour from the individual's perspective and the meaning these individuals, or group of individuals, attribute to the human problem being investigated (Creswell & Creswell, 2017). Individuals from the group in this study were able to collaborate with one another and therefore learn from their peers within the group.

Case Study Research

The research approach adopted when conducting the investigation was case study. What demarcates that this is case study research is that it referred to a "particular instance" that is "singular and distinct" (Rule & John, 2011, p. 3). This research used a particular group of students at a particular institution. However, what theoretically demarcates this case study research is the Threshold Concepts Theory applied to it, making it more than just a case located at a physical university site. Case studies produce an understanding of the phenomenon being investigated with a rich description (Rule & John, 2011). The understanding that is generated by means of a case study is fitting for the interpretivist paradigm that the study lies in, as it provides an understanding of one specific real-life instance over a specific period of time in order to convey the reality of the phenomenon being investigated (Navarro Sada & Maldonado, 2007; Rule & John, 2011). The study also used a research method called Interactive Qualitative

Analysis (IQA), that was guided by the purpose of a case study, that of understanding the phenomenon (Rule & John, 2011). It also required students to provide written feedback in order to deepen this understanding.

Sampling

Northcutt and McCoy suggest that when implementing the Interactive Qualitative Analysis methodology a focus group should ideally consist of twelve to twenty participants (Northcutt & McCoy, 2004). As researcher, I therefore aimed to select twenty students from the Accounting 101 class. Amongst other attributes, these students should possess rich information regarding the objective of the study. These students should be able to shed light on my case study (Rule & John, 2011). The intended sampling choice made was that of purposive sampling. When conducting qualitative research, positivist researchers use the concepts of reliability and validity. Trustworthiness is used instead by interpretivist researchers using qualitative research, which is further broken down into four concepts (Denzin & Lincoln, 2011; Rule & John, 2011). Guba's view regarding trustworthiness as the substitute to reliability and rigour, indicated that attention needed to be given to the transferability, credibility, dependability and confirmability of the study at hand. These are the naturalistic terms given to the four aspects of trustworthiness (Guba, 1981). Trustworthiness encouraged values like rigour, transparency and ethics in order to gain the trust of the participants of qualitative research (Rule & John, 2011).

Data Collection

The first part of the methodology involved the use of two semi-structured interviews. During this part of the study, the tone was set in order to get to know the participants. The Myers-Briggs Type Indicator semi-structured interview was also utilised to understand what motivated and what troubled the participants, in order to assess the personality of the participants. The second part of the methodology involved the use of a set of Accounting 101 tutorial questions embedded with what I deemed to be accounting threshold concepts that the students attempted during the programme. The focus group of students were taught about the Threshold Concepts Theory and how to apply them to a tutorial question. These tutorial attempts were collected as a source of written reflection. The participants were also requested to reflect on their weekly experiences as they learned in a threshold concepts tutorial programme. Journaling is a student-centred tool used to identify if students are making sense of phenomenon being examined (Bouldin et al., 2006). These weekly journal entries were

collected as another source of written reflection. This data was used to further validate and capture the affinities identified more deeply, from Phase One of the IQA process. The third part of the methodology involved the implementation of the chosen research methodology, that of Interactive Qualitative Analysis (IQA) that analysed a semester's worth of case studies conducted in the form of tutorial sessions. This methodology is housed in social constructivism as it "privileges the nature of socially constructed meaning" (Northcutt & McCoy, 2004, p. 4). The IQA methodology was conducted in two phases in order to generate data: the first, via focus group sessions; and the second, by means of semi-structured interviews.

Interactive Qualitative Analysis (IQA) (Northcutt & McCoy, 2004)

As mentioned, IQA was used to understand how Accounting 101 students learned in a threshold concepts tutorial programme. Prior studies have utilised IQA in the areas of educational psychology, economics and managerial accounting and finance to date. After an extensive search around the disciplines to which the IQA methodology had been applied, it was concluded that this will be the first time it will be applied in the discipline of accounting and more specifically, non-major accounting students studying Accounting 101, in conjunction with the Threshold Concepts Theory and the Myers-Briggs Type Indicator. Having a background in the commerce field made using this methodology very user-friendly as it comprehensively listed each step of the process. Even though IQA is a predominantly qualitative method, it incorporated quantitative data with qualitative data systematically (Bargate, 2015). This method was divided into two phases.

Phase One involved the use of a focus group to drive this phase. This type of group interview assisted to investigate participant's knowledge and viewpoints and how and why they think the way that they do (Kitzinger, 1995). The focus group identified affinities, or as Northcutt & McCoy state, "quilt pieces", regarding the phenomenon of the study. The participants then analysed the relationships amongst the affinities using an Affinity Relationship Table (ART). The relationships between the affinities are then mapped to produce an Inter Relationship Diagram (IRD). The final product was a visual representation of each affinity relationship that had emerged, a Systems Influence Diagram (SID). This focus group was conducted upon completion of the threshold concepts tutorial programme.

Phase Two involved conducting semi-structured interviews to validate the end product of Phase One, the Systems Influence Diagram. This phase confirmed the Systems Influence Diagram

results and provided a deeper meaning of the affinities created. The semi-structured interviews followed the same informal tone set out in the focus group. The participants were made to feel comfortable enough to respond as freely as possible, as opposed to using a 'yes' or 'no' response to the set of questions (Longhurst, 2003). The affinities identified in Phase One were used to formulate the interview questions and act as the codes that analysed the interviews.

1.6 Organisation of the Thesis

This study has been divided into thirteen chapters for ease of understanding.

Chapter One

This chapter has introduced the study, offering a brief overview of the background, context, rationale, significance and focus that directed the study.

Chapter Two

This chapter describes the choice of framework for the study and the paradigm that the framework lies within. It further breaks down the concepts of the theories used that are relevant to the research questions in order to indicate where I may possibly contribute to scholarship relevant to the discipline I have chosen to investigate.

Chapter Three

This chapter conducts a review of the national and international literature surrounding the themes investigated; around the preconceptions of non-major accounting students, effective teaching and transformative learning, the affective nature of the troublesome discipline content, and the affective journey during the liminal phase of learning.

Chapter Four

This chapter describes the three parts of the research methodology that were employed to obtain answers to the research questions. Part one of the research methodology focuses on the purpose of the research and the administering of introductory semi-structured interviews, including the Myers-Briggs Type Indicator; part two offers the rationale for designing the first Accounting 101 threshold concepts tutorial programme based on the ETC project; and Part Three, the explanation of the use of Interactive Qualitative Analysis (IQA) for the generation, collection

and analysis of the data.

Chapter Five

This chapter describes how the participants were found just prior to the commencement of the lockdown in South Africa due to the coronavirus disease (COVID-19) and how they were finalised after the announcement of the lockdown. This chapter also indicates how the lockdown was used as an opportunity to create a newly-designed online platform based on my participants.

Chapters Six and Seven

These chapters discuss the Interactive Qualitative Analysis (IQA) data collection and analysis protocols that were implemented during the COVID-19 pandemic, as this was the first time that IQA has been conducted using an online platform. The group reality for the system elements and affinity descriptions are outlined in Chapter Six. The group reality for the system relationships to depict a Systems Influence Diagram (SID), a mind map of the system, and the individual realities of the IQA interview, are outlined in Chapter Seven.

Chapters Eight and Nine

These chapters present the analysis of the affinity pair relationships identified by the participants, with explanations of how each affinity influenced the other within the pair. The affinity pair relationships of the drivers are outlined in Chapter Eight, while the affinity pair relationships of the outcomes are outlined in Chapter Nine, relevant to the IRD and SID generated.

Chapter Ten

This chapter describes what I deemed to be the threshold concepts of Accounting 101. It further explores the participants' reflections of the threshold concepts tutorial programme for Accounting 101 relevant to the affinities identified from the IQA process.

Chapter Eleven

This chapter discusses how the first system, the IQA, related to the second system the study has chosen to implement, the Myers-Briggs Type Indicator, to assess the personality of the participants based on the affinities identified from the IQA process prior to and upon completion of the threshold concepts tutorial programme.

Chapter Twelve

This chapter presents the findings from the affinities generated from the IQA process, relevant to the existing scholarship regarding the chosen discipline and the Threshold Concepts Theory.

Chapter Thirteen

This chapter signals the conclusion of the study, providing a brief overview of the study, the limitations experienced, and suggestions for further research. It also provides a framework for non-major accounting students' learning of Accounting 101 in a threshold concepts tutorial programme.

CHAPTER TWO
THEORETICAL FRAMEWORK

2.1 Introduction

This chapter commences with a description of the learning paradigm chosen, followed by an explanation of the chosen theoretical framework. The relevant characteristics of the two theories were elaborated on specific to the study.

2.2 Learning Paradigm

As per the Learning Theory the learning paradigm or worldview held by the Threshold Concepts Theory is that of social constructivism (Meyer, 2008). The constructivist paradigm postulated that truth is deemed to be relative as it depends on one's own subjective perspective, allowing meaning to be created (Baxter & Jack, 2008). In this learning paradigm, groups of students with a shared background created knowledge in collaboration with one another, thus giving it a shared meaning (Kim, 2001). This qualitative study draws upon the principle of interpretivism as the approach to research, since the purpose of the research was to attempt to deeply understand the phenomenon and describe meaning that is socially constructed. The phenomenon of the study is non-major accounting students' learning of Accounting 101. The study was conducted in order to understand why these non-major accounting students learn Accounting 101 in the way that they do. This study in no way intended to solve the problems that may arise from their learning of Accounting 101, but sought to merely gain a deep understanding of why they encountered the problems that they did.

The ontological component of the interpretivist paradigm looked at the nature of social reality and the nature of truth. As meaning was constructed socially by a group of individuals, the reality constructed will therefore be subjective. There were many truths to the research conducted since it was set in a particular context at a particular point in time. If the same research was conducted for a different set of participants at a different time, then the meaning constructed in that particular context would also be different, as reality will once again be subjective. As the researcher, certain decisions regarding the questions asked had to be made

in order to collect the data required. The reason that the research was more subjective than normal was because this study was conducted during an abnormal time, being a lockdown necessitated by the coronavirus disease (COVID-19) pandemic. There were changes to the initial questions created prior to the pandemic, and this validated the subjectivity involved when conducting this study. When approaching the study, I knew that there would be many truths. As per the methodology of Interactive Qualitative Analysis (IQA), the number of participants required was between twelve and twenty. Even though there were just a few versions of the truth that this study was exposed to in the sample of participants, I knew that there would be many more versions had it been feasible to use the entire student population. The study, however, had to be limited to the required number of participants, and the subjective version of the truth provided by the participants had to be trusted (Foucault, 2017) in that particular context, in order to effectively and efficiently use the chosen methodology.

The nature of discourse component of the interpretivist paradigm was dialogic. This meant that meaning was created when there is dialogue amongst the participants and not just the thoughts of the individual researcher. In order for the discourse to have meaning in that particular context, there had to be consensus reached amongst the participants of the group.

The nature of communication component of the interpretivist paradigm was transactional. Meaning was created when the participants collaborated with each other. One participant proposed a suggestion to the group and the group responded by either agreeing or disagreeing and then created further meaning with the tabled suggestion.

The epistemology component of the interpretivist paradigm was a branch of philosophy that investigated how knowledge was constructed. It investigated, for example, the nature, the methods and the limitations of knowledge production and tells us how we can understand what we are researching. Where the many truths of the participants overlap with the beliefs, is the point at which knowledge and poorly justified, true beliefs are proposed.

The validity and application component of the interpretivist paradigm comprised of authenticity, trustworthiness and credibility. Authenticity refers to the context at which the study took place. The choice of context, the university in South Africa at which I work, was a choice of convenience, and one that made sense as these were students who met the criteria to participate in the study. Trustworthiness refers to the way in which I, as the researcher, wrote

up my research. It is implied that I would follow the appropriate research etiquette, apply the appropriate research ethics and abide by the systematic steps laid out in the chosen methodology, therefore allowing readers to trust what is written in the study. The participants were made aware of the fact that they may change their answers and statements submitted, which increased the trustworthiness of the study as it was not limited to that of a positivist worldview. Credibility refers to the reliability of the study. The data collected must be realistic and not seen to be too good to be true or unbelievable (Annexure 1). As the study was conducted during an abnormal time, the COVID-19 pandemic, the responses received should be in line with the challenging methods used. All obstacles and errors as well as the successes of the researcher were articulated to the readers. As much as a researcher would ideally aspire to be fully successful, this success may seem to be too good to be true and therefore not an accurate reflection of the study conducted.

In the world of the Threshold Concepts Theory, constructivism has been seen as the way to promote good teaching and learning practices. This, however, placed higher expectations on a student from a cognitive point of view and not all students were open to learning in a challenging environment (Perkins, 1991). This type of learning may be troublesome to the student. This characteristic of 'troublesome knowledge' (Meyer & Land, 2006) was elaborated on in Chapter Three.

Student-Centredness

In the past, departments of accounting in the South African Institute of Chartered Accountants (SAICA) accredited universities have focused solely on the professional training of future chartered accountants and have omitted a research focus. The Threshold Concepts Theory allowed discipline experts to link their teaching to this much needed research focus that was required from the chartered accountant profession. Teacher-centredness and student-centredness created an environment that separated research from teaching, as the dialogue was one-sided.

There has been a gradual shift away from the traditional teacher-centred approach of learning to a more student-centred approach of learning. This method followed the approach of the constructivist teaching philosophy, as students take charge of their learning in an active manner as opposed to the conventional passive methods of learning. Here, students learned by doing and by experiencing the discipline content. This type of learning goes hand-in-hand with

Dewey's (1938) vision to have students equip themselves with the tools that enabled them to take control of their learning, focusing on how students learned as opposed to how teachers taught. Therefore, once these students grasped these tools, their understanding and the way in which they approached their learning became the focal point (Ahmed, 2013; Biggs, 2003; Meyer et al., 2010). Next generation learning spaces also presented a shift away from the conventional way of learning to the development of new learning spaces in this digital age. This implied that a more student-centred approach would be adopted as students are being directed into a space that promoted active learning where students took charge in a digital domain (de la Harpe & Mason, 2014).

Transactional Curriculum Inquiry

A new inclusive paradigm, transactional curriculum inquiry, promoted an environment where both discipline experts and students, as well as educational researchers, shared dialogues and co-inquiry. This implied that this type of paradigm disrupted the conventional teacher-centredness and student-centredness, resulting in neither form dominating the discussion. These three parties therefore shared their understandings of the difficulties faced, as well as their ways of mastering these difficulties. This process of shared inquiry shifted our traditional focus away from student evaluations that assessed the quality of teaching and learning, to instead ultimately creating a framework for disciplines. The Threshold Concepts Theory is one version of transactional curriculum inquiry (Cousin, 2007, 2008; Westergaard & Wiewiura, 2015). The research focus mentioned, relating to student-centredness, is reiterated here to demonstrate that there is research undertaken to evaluate the difficulty of the discipline. This meant that discipline experts need not learn another discipline when using the Threshold Concepts Theory, but rather research their discipline deeply (Barradell, 2013; Cousin, 2010) in order to develop the best ways to teach and learn it.

2.3 Theoretical Framework Choice

The purpose of a framework, be it theoretical or conceptual, is to assist us to inform our thinking throughout the entire study. One is unable to navigate through the different parts of their study without a framework to guide one in a logical manner. It is therefore seen as a tool that provides us with coherence of thought, consistency and a stable leg to stand on that we can always come back to when we veer off course throughout the study. A theory is a high-level

explanation of the phenomenon under investigation, using various concepts. Upon trying to conceptualise the study as a whole at the commencement, the theory that needed to be utilised needed to allow to the development of the questions necessary to generate data and analyse data. There is no one perfect theory in the particular field chosen and any theory chosen is not complete nor does it allow for the flexibility relevant to a researcher's study. The particular theory chosen could reveal concepts that the researcher did not even consider initially or a concept present could distort the view of the researcher, causing dissonance and an incomplete fit.

Being aware of the fact that there is no one perfect theory to accurately match the study conducted, an existing theory with the concepts most relevant to the study was required, with cognisance of the fact that a theory or set of theories chosen does not automatically mean that it is also the framework implemented throughout the study. From an ontological viewpoint, as we perceived the world through our own lens based on our own experiences and human nature, it was imperative to firstly understand the positioning of the self before we looked through the lenses of others and drew on the shoulders of the great thinkers we chose to stand on, thus viewing the world from their point of view. The election to use a theory or set of theories of the great thinkers is done at the expense of one's own thoughts to guide us through the research journey undertaken. The theory or set of theories chosen provides us with the means to drive our thought process throughout the study.

This study implemented the use of the original Threshold Concepts Theory from 2003 by Meyer and Land to explain the phenomenon of student learning. I could not accept the theory posited by Meyer and Land solely, however, as I felt that this theory addressed Threshold Concepts on a very broad level. This study therefore drew upon another theory, the Threshold Concepts Theory from 2016 by Timmermans and Meyer, that comprised of more concepts relevant to the research study, and which provided the study with further explanations regarding the phenomenon. These two theories used to create the framework were related theories housed in the same paradigm, i.e. that of social constructivism. As this study was a qualitative one, it drew upon the interpretivism principle to deeply understand the phenomenon. The use of the two theories is also known as a multi-theoretical approach to qualitative inquiry, called "bricolage". Bricolage was derived from a French expression, involving the creative use of leftover materials from projects to fashion new artefacts. This study also adopted this eclectic approach (Kincheloe, 2005; Rogers, 2012), by using the relevant concepts from multiple

theories to fashion a new theoretical framework unique to the research questions.

The Heuristic Research Framing

By logically connecting sets of concepts from the two selected theories, a theoretical framework was ultimately created in order to assist me to scaffold the study (Varpio et al., 2020), with reference to the research questions of the study. This theoretical framework was therefore comprised only of the concepts relevant to the study as well as any additional concepts needed to incorporate relevant to the context, in order to explain the phenomenon. The theory and each concept from the theories chosen as well as the additional concepts, were explained in terms of the study as well as the relationships between them. Therefore, the use of theoretical frameworks reflected the work undertaken by a researcher in order to utilise a particular theory or set of theories. This meant that a unique framework with its own inherent advantages and limitations, as with any other framework, was used throughout the study.

There are two different types of research approaches, namely, the Objectivist Deductive and Subjectivist Inductive. The application of the terms 'theory' and 'theoretical framework' in this case, differed greatly between the two different types of research approaches. The effects of the Subjectivist Inductive approach and the conceptual framework were not considered, as the type of research approach used was the Objectivist Deductive approach and the framework used was that of a theoretical nature.

The Objectivist Deductive approach to research commenced with a general view of the concepts at hand, to a more tangible form of data generated within the chosen context. This top-down type of approach involved the commencement of a general view of the relevant concepts chosen from the theories selected to the deriving and testing of a hypothesis. The findings from the analysis of the data may result in a range of outcomes: either supporting, refuting, refining or challenging the concepts of the theories chosen to be used in the theoretical framework.

The Objectivist Deductive approach to research hinged on the following two assumptions: firstly, that there is a real world that existed totally independent of a researcher; and secondly, that this real world was understood from the collection of objective data regarding reality. The result of this type of research approach allowed for the creation of knowledge with a heightened understanding of the real world being researched. The most popular approach to the Objectivist

Deductive approach to research was by using experiments to test the assumptions the researcher had about how the phenomenon worked with the use of research questions to answer relevant to the phenomenon under review.

The manner in which an Objectivist Deductive researcher commenced research was with the application of the chosen theory. The theory provided the researcher with the concepts to formulate meanings relevant to the research undertaken as well as the relationships amongst these concepts in order to derive and test the hypothesis under review. Therefore, the purpose of a theory is to test a hypothesis posed from the theory or set of theories selected. The two main attributes of a theory from the Objectivist Deductive approach are that it must be testable and it must have the option of being falsified. The theory that is being used should build on prior research studies. A new research study will contribute knowledge and have the effect of supporting, refuting, refining or challenging the theory. The first theory I used was the original theory from the Threshold Concepts work from 2003. A further theory from the Threshold Concepts body of knowledge from 2016 was used, as it had the effect of adding knowledge to the original Threshold Concepts Theory over the years of research, which allowed the outcome of the research questions to be better predicted and to also contribute to the evolving theory.

An Objectivist Deductive researcher commenced with the identification of the theory that they planned to use to construct the theoretical framework (Varpio et al., 2020). The theory is transformed into a theoretical framework once the researcher explained the chosen context for the research study, and the meaning each concept held to the researcher in that particular context relevant to the research questions that the researcher needed to ask. This theoretical framework is created at the outset of the study and remained static prior to the commencement of the collection of data. Once the theory or set of theories, in the case of this research study, are chosen, they will then become the object of the research study as it was used to construct the theoretical framework. This will in turn enable the knowledge in similar research contexts to be viewed with a similar ontological perspective and thereby show how the current research can add value and knowledge to the existing body of research using the same theory as a baseline.

The theories selected were applied throughout every stage of the study. The outset of the research involved the justification of the rationale for the study (Stewart & Klein, 2016). This included a description of why the particular theories were selected for the field of research

being investigated. As the researcher, I knew which questions to ask regarding each concept of my framework and each relationship of my framework and that this framework should be able to provide the study with the tools necessary to answer the research questions posed. A fully detailed explanation of the language used for each concept and each relationship between the relevant concepts, further validated the logic behind using the theories chosen. Upon the completion of the construction of the research questions posed, the next step was the consideration of the methodological viewpoint that best fitted the study. This required an in-depth knowledge of which methodologies have been used and which viewpoint would allow for a fresh, new perspective of the study, which is the primary purpose of the Threshold Concepts Theory. These theories chosen in turn provided the study with a theoretical lens that was used to design the entire study, and a means to develop tools or instruments to collect data from the chosen context. Once the data is collected and followed up on, the theoretical lens will then be used to undertake the data analysis and interpretation thereof. Thereafter the theoretical framework that was created will be revisited and amended based on the interpretation of the findings in the field.

A further implication of a theoretical framework was that it primarily provided the researcher with a tool to investigate the phenomenon and the meaning, nature and challenges associated with it, therefore providing a deeper understanding of the phenomenon under investigation (Lynham, 2002). The theoretical framework served as a lens that the phenomenon can be viewed by indicating that the theoretical framework utilised should be able to explain how the concepts used were perceived using the theoretical lens chosen. This provided us with an explanation for the experiences gained in the research study. One can then use the explanations and understandings obtained from the explanations to act in a more informed and therefore improved way going forward regarding the phenomenon and the quality and relevance of the research undertaken. The theoretical framework therefore provided the tools to turn a meandering research-based guess into a logical, evidence-based argument suitable enough to compile a thesis.

2.4 Theoretical Framework Explained

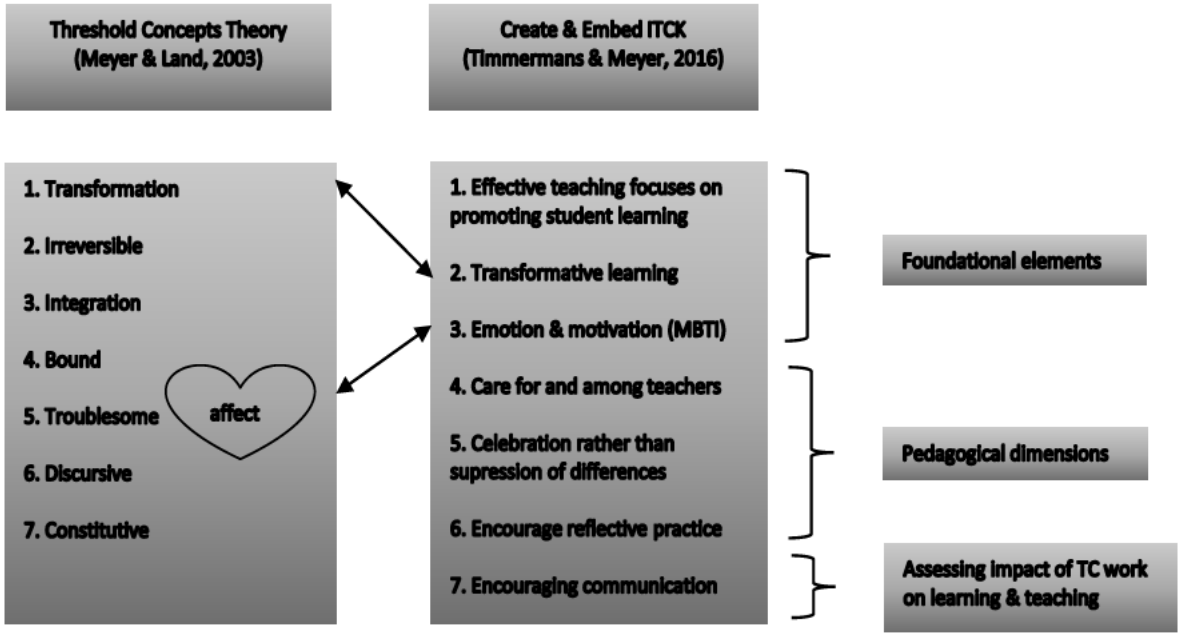

Figure 1: Theoretical Framework

I am one of the discipline experts in the Bachelor of Commerce in Accounting Programme at a university in KwaZulu-Natal. Over the past 12 years I have lectured in three disciplines, my favourite being Accounting 101. The reason I am passionate about accounting at a first-year level is that I enjoy teaching non-major accounting students the building blocks of accounting. My philosophy when motivating students to learn was: *Work smart, not hard and focus on the concepts*. I was introduced to the Threshold Concepts Theory a few years ago and understood that the aim of the theory was to identify particular concepts that students needed to grasp in order to master the discipline. Therefore, this theory, coupled with my passion for Accounting 101, was the perfect fit for my study. Non-major accounting students study Accounting 101 in their first year of study as a compulsory discipline. The student numbers in these classrooms are traditionally quite high yielding historically low pass rates. Students do not see the value of accounting in their programme relevant to their competency frameworks. Therefore, students are not willing to give non-major disciplines the attention a major discipline would receive. These negative preconceptions that a student possessed may result in a student not being able to master the important concepts in accounting. This was a situation worth examining. I felt that these important concepts i.e. the threshold concepts, should be taught to students to help them master the discipline.

Threshold Concepts and the Otherness

After an extensive study of the Threshold Concepts Theory literature, it became apparent that this theory cannot be used blandly. The literature supported the view that in order to utilise the Threshold Concepts Theory to its full potential, it must be used in conjunction with another theory or set of theories from other disciplines. This implied that the other concepts used from the theory or set of theories from other disciplines will be specific to the context chosen to investigate.

Researchers have posed the question as to whether the Threshold Concepts Theory would create an exclusive theoretical framework (Lucas & Mladenovic, 2007) that would accommodate all discipline-specific needs. However, the developers of the Threshold Concepts Theory have stated that the "theoretical development" of this theory will only be successful after discipline experts have drawn on their relevant field of research (Meyer et al., 2010, p. 333). This made sense as the experiences each cohort of students encounter when using the Threshold Concepts Theory will differ in the relevant context and discipline that the researcher was investigating at that particular point in time. In turn, this meant that the Threshold Concepts Theory can be seen a catalyst that draws together many different fields of research (Lucas & Mladenovic, 2007) that have the effect of adding value to the Threshold Concepts Theory and the relevant discipline under investigation. Other researchers like Osmond, in 2006, concurred with this train of thought, and also concluded that the only manner in which the Threshold Concepts Theory could be grasped, was with "knowledge practices" (Meyer, 2008, p. 262) relevant to the area of research chosen.

There have been cases of the Threshold Concepts Theory being used in conjunction with the methodology of action research (Orsini-Jones, 2014) by discipline experts in the constructivism paradigm. Being a discipline expert who is also in the constructivist paradigm, I found myself focusing on the emotions of Accounting 101 students and thus elected to use the constructivism paradigm, and more specifically the social constructivism paradigm, with the affective theories found in the discipline of psychology. Prior Threshold Concepts Theory studies have shown the use of the discipline of psychology in a number of ways with varying methodologies. Cognitive psychology has been seen to be connected to the existing Threshold Concepts Theory research (Lucas & Mladenovic, 2007) with the use of promoting dialogue as the chosen methodology. Both cognitive and affective psychology in conjunction with Threshold Concepts Theory have been used with the methodology of phenomenology to assess mastery

of concepts incorporating research conducted by Perry in 1970 (Cousin, 2008). A further study with cognitive psychology used the Theory of Mediated Learning Experience and the Structure of Observed Learning Outcomes (SOLO) Taxonomy (Biggs, 2011) to assess progression to mastery (Meyer et al., 2010). Another Threshold Concepts Theory study then went on to use metacognitive psychology with a discursive methodology, coupled with examples to account for the study (Meyer, 2016). This study investigated how students learned and why they learned in the way that they did in an Accounting 101 threshold concepts tutorial programme, using the psychological instrument, the Myers-Briggs Type Indicator and the Eysenck Personality Theory.

Threshold Concepts Explained

The first framework used was the Threshold Concepts Theory by Meyer and Land that emerged in 2003. This theory stated that a learning outcome had to possess the seven characteristics of the theory in order to be classified as a threshold concept. This Threshold Concepts Theory provided a fresh, new perspective via the use of a theoretical framework, required in the teaching and learning practice, as it promised a review of these teaching and learning practices. This theoretical framework was also used to drive the design of the course and programmes, because it acted as an analytical tool (Lucas & Mladenovic, 2007; Westergaard & Wiewiura, 2015) for the relevant items under review. The Threshold Concepts Theory also has the effect of isolating threshold concepts within a discipline, thereby creating a preliminary framework to be used according to the relevant discipline. Once the seven characteristics of the Threshold Concepts Theory were met, the characteristics of a core (Meyer et al., 2010) threshold concept would then need to be met. A core threshold concept has the following requirements: ethics, the aspect of morality and value; metaphysics, the aspect of existence; and epistemology, the aspect regarding knowledge within the discipline.

A further purpose of Threshold Concepts Theory was that it was not meant to be static, but to provide an evolving conceptual framework (Barradell, 2013; Land et al., 2016) that required sufficient empirical examination in order to assess the quality of learning within a discipline. Prior studies in the discipline of accounting have revealed that one of the macro activities undertaken, the usage of accounting information in a broader context, i.e. the user perspective, had the effect of providing a framework of a conceptual nature. Unfortunately, only the minority of discipline experts used in this study felt the need for this type of structure in the form of a conceptual framework (Meyer & Land, 2006).

The Threshold Concepts Theory also had the effect of embedding (Hedges, 2014) these discipline-specific threshold concepts into the teaching and learning practices of the discipline, therefore providing the necessary transformation required in the discipline. This transition can be successfully negotiated from the different viewpoints of the discipline experts and students involved (Land et al., 2005). The initial use of the Threshold Concepts Theory was by the discipline experts who were under pressure from academic institutions to recontextualise knowledge for the institution as a whole, as well as the individual disciplines they teach, in order to keep relevant and up to date with the teaching and learning practices globally. The Threshold Concepts Theory may be the tool that will enable this much needed recontextualization (Gronow & Morrison, 2017) in the form of a framework. Discipline experts then utilised the Threshold Concepts Theory to create a framework and apply the theory mentioned to a student cohort. The application of the framework created then revealed a comprehensive analysis of the student cohort's understanding alongside a systematic analysis of the experiences each student encountered en route to a complete understanding (Lloyd & Frith, 2013) of a chosen concept in the discipline. The framework was then amended to have the effect of making explicit the components required in order for a student to gain a complete understanding of the concept. The same process was used for a cohort of research students in order to understand how they learned. The findings from this study had the effect of creating a framework (Kiley & Wisker, 2009) based on how this cohort of research students approached learning. Another perspective would be that of self-explanation. A study showed that if one approaches the issue of problem solving, the explanation of how one encountered the issue gave rise to the processes relating to another higher level of learning, i.e. meta-learning (Foley, 2012). Another perspective that discipline experts considered would be that of the analysis of the reflections of the journey undertaken from a student to a practitioner. This analysis assisted the discipline experts to be aware of any troublesome knowledge that may be found in the curriculum. Reflections from this journey (Fortune et al., 2012) enabled the discipline experts to create a framework relevant to the troublesome knowledge that was previously not considered as troublesome in the eyes of the discipline experts.

'TC' vs 'tc'

As mentioned, the Threshold Concepts Theory carried two titles. The first title is 'TC'. This title was seen to be an "analytic educational framework" that comprised of the seven key features or characteristics of the Threshold Concepts Theory. The second title is 'tc'. This title was seen to be the "content of a discipline" "that poses deep challenges to a learner", i.e. the conceptual framework for any discipline that comprised of the learning outcomes of a discipline that possessed the seven characteristics of the Threshold Concepts Theory. The theory used was the original theory constructed by Meyer and Land in 2003 in conjunction with a theory constructed by Timmermans and Meyer from 2016, that sought to create and embed integrated threshold concept knowledge in the practices of university discipline experts. This second Threshold Concepts Theory used the denotation 'TC' to outline the concepts that comprised this "analytic educational framework" (Meyer et al., 2010).

The denotation 'tc' described the conceptual framework for a particular discipline that possessed the then five and now seven characteristics of the Threshold Concepts Theory. The remaining concepts of a particular discipline that did not meet the definition of the Threshold Concepts Theory, i.e. did not possess the five, or now seven characteristics of the Threshold Concepts Theory, would be the concepts that are left behind to create a different type of framework, of a hierarchical nature and not an analytic one. These remaining concepts that are closely related or closely associated with the threshold concepts of a discipline, can be seen as non-transformative concepts (Land et al., 2016) that have the effect of becoming the learning outcomes of a particular discipline.

To further clarify, a threshold concept is not a 'key', 'core' or 'basic' concept. An understanding of these 'key', 'core' and 'basic' concepts did, however, serve the purpose of providing discipline experts and students with access to the threshold concepts of a particular discipline. A 'core' concept was seen as the building blocks or foundation of a particular discipline, and a 'key' concept (Davies, 2012; Meyer, 2008) will therefore act as a key, allowing access to a building, or portal that provided understanding, which can be likened to the door that Alice in *Alice in Wonderland* entered (Carroll, 1951). As per the Threshold Concepts Theory literature, the variety of conceptions or perspectives that one possessed, made it possible to understand a phenomenon in a variety of perspectives as well. This conceptual change occurred when a student's naïve conceptions, formulated by their everyday experiences, are discarded upon the instruction given by discipline experts when they taught

students the preferred conception relevant to the particular discipline. This implied that the student will only gain the correct discipline-specific understanding once they have made sense of the selected examples, thereby viewing the world through the lens of the concept. This Threshold Concepts Theory view was in direct contrast to the Bloomian view of differentiating the 'understanding' and the 'applying' of particular concepts (Davies, 2012). Bloom's Taxonomy allowed a student to commence with a blank canvas before acquiring a "definitional understanding" of a particular concept and then an expectation for the student to learn how to apply that concept (Davies, 2012).

2.5 Characteristics of the Threshold Concepts Theory in 2003

I will now elaborate on the 'TC' denotation of the Threshold Concepts Theory, and the seven characteristics of the "analytic educational framework".

2.5.1 Transformative

The first characteristic is 'transformative'. This characteristic was seen to have an ontological shift, as well as a conceptual shift with any new understandings gained, becoming a part of us. This characteristic was elaborated on in Chapter Three.

2.5.2 Irreversible

The second characteristic is 'irreversible'. This characteristic implied that since these threshold concepts apply to later learning in life that can be tracked, i.e. at a tertiary level, the concept is unlikely to be forgotten after it is fully understood. Once this later learning in life occurred, during the threshold concepts tutorial programme for Accounting 101 students, the concepts taught and learned will hopefully locate all these students in a place where "they cannot get back to innocence". This acquisition of the concepts taught does not necessarily imply that student understanding will rest but may be modified or even rejected based on "an internalised" or naïve understanding of the concepts. Some discipline experts may experience a lack of empathy (Meyer & Land, 2006, p. 136) while waiting for all students to reach the same point of mastery. Most of the Accounting 101 students should view the understanding of the threshold concepts taught as an "irreversible conceptual transformation" (Meyer & Land, 2005,

p. 373; Zimbardi et al., 2012), that will bring about a huge change in their thought process from commencement to completion.

2.5.3 Integrative

The third characteristic is 'integrative'. Integration was also seen to be troublesome. The reason that this characteristic was troublesome is that once you grasped all the parts (Meyer & Land, 2003, 2006), they needed to be pieced together in a different way to when they were initially grasped. It is the nature of some disciplines to contain "complex concepts", i.e. a system of individual interrelated concepts that have the effect of being troublesome as they were seen to be extremely interdependent and have to be learned as an "integrated whole" instead of as individually. A further reason for the inherent troublesomeness regarding integration, was that this deep level of integration was not always conveyed to students as some discipline experts may take this integration for granted (Meyer, 2008, p. 143) over the years. In essence, the 'integrativeness' of a threshold concept meant that once you acquired the concepts or parts, in the form of knowledge and understanding, you needed to then process these concepts or parts in a different way (Meyer & Land, 2006), as some of them are subject to being viewed in terms of an integrated or interrelated system. The elements of troublesomeness that a student may be subjected to are: firstly, the concepts or parts may be learned in a rote fashion if introduced to the student immediately; and secondly, once the student has acquired adequate knowledge of the concepts or parts in order to then process that knowledge in an integrative manner, then he/she will then have to be persuaded to view these concepts or parts in a re-interpreted way by the discipline expert so as to ensure that he/she is on the right path and has not adopted a completely abstracted point of view (Meyer & Land, 2006).

The characteristic integration "exposes the previously hidden interrelatedness of something" (Meyer, 2008, p. 261). Great importance is placed on a student being able to grasp the complex connections and interconnections of the threshold concept upon mastery (Meyer & Land, 2006). The two all-important characteristics of any threshold concept are seen to be the 'integrativeness' and 'transformativeness' (Meyer et al., 2010). The reason that integration was one of the all-important characteristics is that items that "bind" are those that are generally hidden from the naked eye or are items that are not considered a prominent feature in the entire structure. This implied that the smaller concepts in a discipline will have the outcome of being

more effective when providing the feature of integration than the grandiose (Meyer, 2008, p. 128) concepts. Once the knowledge and understanding of concepts or parts have sufficiently been acquired, a student will then be in the position to internalise the threshold concept as a whole. This in turn meant that the student was able to integrate the threshold concepts (Meyer & Land, 2006) and transform their initial use of the individual ideas of the discipline. If a student failed to grasp the appropriate level of knowledge and understanding, this would result in the learning of new ideas that are fragmented in nature and will subsequently never reach the desired level of integration required.

Integrated Threshold Concept Knowledge

Researchers have found that the Threshold Concepts Theory can only be fully grasped with a set of "knowledge practices" (Meyer, 2008, p. 244). This implied that the Threshold Concepts Theory integrated the insights from an assortment of disciplines and learning theories, thereby acting as a catalyst (Lucas & Mladenovic, 2007). The discipline that this study predominantly integrated with, were the affective dimensions that are intricately bound with regard to mastery in the field of psychology. The study also incorporated Transformative Learning (Cousin, 2008; Lucas & Mladenovic, 2007). The Integrative Threshold Concept Knowledge (ITCK) converged with pedagogy and learning, thus bringing together the foundational concepts of the theory: effective teaching promoting student learning, transformative learning, emotions and motivation (Land et al., 2016; Timmermans & Meyer, 2017). The construction of ITCK was seen to be a "contemporary pedagogical perspective" (Meyer, 2016, p. 463) aimed to enhance student learning at the convergence (Land et al., 2016) of discipline-specific content and three types of knowledge: the epistemological and ontological status of a threshold concept, the experience in the liminal state, and the repertoire in the pedagogic sphere.

Interdisciplinarity

The Threshold Concepts Theory has been called upon to explore the interdisciplinarity aspect amongst fields as it provided a "sense of texture" (Land et al., 2016, p. 122) to the incomparability inherent in interdisciplinarity. Disciplines will overlap, or integrate, in a variety of ways with other disciplines as they develop. This implied that as time passed, there was hope that researchers would offer a fresh perspective regarding these overlaps (Klein, 1990). This study looked at the analysis of Accounting 101 for non-major accounting students from different programmes in conjunction with the discipline of education, using the Threshold Concepts Theory as well as the discipline of psychology, using the Myers-Briggs Type

Indicator and Eysenck Personality Theory. Accounting 101 is a compulsory discipline in these different programmes (Gray & Blake, 2013), of which only the Bachelor of Commerce in Accounting programme required a student to major in such discipline.

The Bachelor of Commerce in Accounting programme has four disciplines that students are required to major in, and the relevant discipline experts regularly liaise to discuss how best to integrate the four disciplines in order to best provide these students with a more holistic view prior to entering the commerce field. The discipline of information literacy for example is utilised in every discipline and was seen to be interdisciplinary. The study conducted for the discipline of information literacy concluded that all threshold concepts generated by this particular discipline should be seen in two ways: as 'bounded' (Brunetti et al., 2014) by each specific discipline, as well as be seen as overlapping into other disciplines since they possessed the characteristic of being viewed as interdisciplinary in a programme. This study used non-major accounting students from different programmes. Therefore, the cohort of students in this study can be likened to the principle from the discipline of information literacy, and the two different ways that these non-major accounting students could be seen would be as bounded by each Accounting 101 discipline found in each specific programme, and not a single programme. Therefore, instead of conducting this research across many disciplines in one programme i.e. 'interdisciplinarity', this study researched many programmes that house the specific discipline of Accounting 101.

There has been much adversity regarding the learning across different disciplinary boundaries as discipline experts have not seen a need to do so, being accustomed to conducting academic activities within their discipline. This transformative, outside of the box (Land et al., 2016, p. 122) type of thinking required the creation of a new box to achieve the "success" of the desired goal. The new box that this study aimed to create involved the creation of a user-friendly threshold concepts tutorial programme designed specifically to address the learning needs (Decker, 2006) of these non-major accounting students, as they encountered not only accounting concepts, but that of education and psychology too, without fear of being immersed in an interdisciplinary environment (Kabo & Baillie, 2014).

2.5.4 Bounded

The fourth characteristic is 'bounded'. This characteristic implies that any conceptual space would be ring-fenced next to other ring-fenced conceptual spaces in a particular discipline. One of the greatest Italian poets in the 1800s, Giacomo Leopardi, wrote a poem aptly describing the characteristic of boundedness. Leopardi wrote about a hedge (Meyer et al., 2010, p. 281) that surrounded his house and the view that he had of the unknown, never-ending landscape beyond the safety of the familiar hedge surrounding his house. The relationship between the threshold of the hedge and the never-ending landscape, illustrated the oscillation between the safety of the familiar, "known" hedge, and the riskiness of the unknown landscape. Leopardi spoke of the scary unknown that lay beyond the comfortable and familiar threshold. This poem aptly reflects the student cohort selected for this study, the non-major accounting students who have to study Accounting 101 as a compulsory discipline offered only during their first year of university study. This discipline is directed at a mix of students who either have or have not encountered accounting before in their schooling careers. The fearful need to pass this compulsory discipline in order to progress in the non-major accounting programme of study, resulted in this cohort of students either trying to move beyond the threshold into the unknown, to pass the Accounting 101 discipline and progress to year 2 of their studies, or to remain fearful of what lay beyond their comfortable non-major accounting threshold, and therefore fail to grasp the Accounting 101 threshold concepts and ultimately to fail the discipline altogether. The metaphor Leopardi uses in the poem quite clearly illustrates the epistemological and ontological viewpoints regarding the "acquisition of troublesome knowledge" that occurred within the field of the Threshold Concepts Theory. The curriculum changes brought about because of the Threshold Concepts Theory have had the effect of converting the fear of the unknown into a love for the never-ending epistemological horizons once a conceptual threshold was mastered.

The use of the Threshold Concepts Theory for traditional, mainstream disciplines, such as Accounting 101, forced discipline experts to examine their conceptual spaces (Brunetti et al., 2014) and therefore to determine and prioritise exactly which concepts of the discipline content are unique to the area of practice under review and can therefore be ring-fenced or bounded as per the Threshold Concepts Theory. This method of ring-fencing or boundedness should not be confused with a researcher creating a threshold. In this study, this method forced me to determine and prioritise the unique concepts in Accounting 101 and to visualise the difference

between boundedness and the creating of a threshold as follows: an analysis of the existing concepts was conducted in order to determine as per these existing concepts, which were unique to Accounting 101. The characteristic of 'boundedness' could be illustrated by taking a ring and putting all these selected, unique concepts in that ring. In contrast, the creation of a new threshold meant that a researcher creates new concepts and forges a new ring to put around these newly-created concepts. This process was used by fundamental researchers (Meyer & Land, 2006), such as Einstein, and differed greatly from the traditional definition of boundedness where thresholds are elaborated upon.

2.5.5 Troublesome Knowledge

The fifth characteristic is 'troublesome knowledge'. This characteristic was defined by David Perkins as counter-intuitive, alien (Meyer & Land, 2003) or seemingly incoherent. A student's everyday understanding of a concept can prevent the mastery of threshold concepts. Attempting to get students to alter their everyday understanding can be an emotional journey that provides great discomfort (Cousin, 2006). This characteristic was elaborated on in Chapter Three.

2.5.6 Reconstitutive

The sixth characteristic is 'reconstitutive'. This characteristic implied that one will reposition oneself (Land et al., 2016) regarding the content of the discipline. Discipline experts needed to be cognisant of the knowledge that students found to be troublesome and will therefore have to create a safe and nurturing space that supported the "periods of letting-go and reconstitution", as these periods may be repeated multiple times before the student's self is reconstituted and fully transformed in the process. The acquisition of this troublesome knowledge had the effect of reconstituting the viewpoint of the student, which in turn transformed the subjectivity and student's sense of self (Devitt et al., 2012; Meyer & Land, 2006, p. 200) during this troublesome process. Once an evaluation of the curriculum for this the troublesome knowledge mentioned was conducted, a supportive liminal space that students felt comfortable enough in to navigate through the troublesome process had to be created. This evaluation was elaborated on in Chapter Four.

2.5.7 Discursive

The seventh characteristic is 'discursive'. This characteristic discussed the language (Land et al., 2016) acquired in relation to the specific discipline content considered. The new concepts that the Accounting 101 students acquired, brought about a new type of expression. The discipline-specific ways of thinking were adopted, and these new trains of thought had the effect of providing new insight to a student's pre-existing novice way of thinking. Once discipline experts have articulated their specific disciplinary ways of thinking, the students would then encounter a reconceptualization of their existing knowledge, which will ultimately result in transfigured thoughts, transfigured sense of self and therefore a "discursive reconfiguration" on the journey that they have experienced. If discipline experts articulated symbolism that is unfamiliar (Meyer & Land, 2006, p. 21) to students in order to express the same concept, this may result in students being confused. The creative use of symbolism will then have the opposite effect and create a barrier to the threshold concept being taught by the discipline expert. As each discipline expert has a different way of articulating or expressing a concept, the characteristic of 'discursiveness' implied that a "universal standard" would be difficult to be adopted by all discipline experts. The breadth of "rigorous scholarship" (Land et al., 2016, p. 302) invited seasoned scholars, as well as the new, to participate in enquiry without fear of their novice points of view, and to therefore provide useful conceptions in the teaching and learning of the discipline.

2.6 Characteristics of the Threshold Concepts Theory in 2016

The further concepts that were used in the theoretical framework were from Timmermans and Meyer in 2016, that sought to create and embed integrated threshold concept knowledge in the practices of discipline experts. This second Threshold Concepts Theory used the denotation 'TC' to outline the concepts that comprised this "analytic educational framework". There are three foundational concepts of the theory. The first concept is 'effective teaching' and is focused on promoting student learning, i.e. discipline experts developed new ways to teach using the Threshold Concepts Theory. The second concept is 'transformative learning'. The Transformative Learning Theory was developed by Mezirow in 1978. This theory evolved over the years and in the year 2000, the aspects of affect and emotion were incorporated. Transformative learning can be described as an interconnected set of threshold concepts categorised into three phases in the liminal phase, i.e. after the pre-liminal phase of the learning

journey. The three phases are personal conceptual change, discipline-based conceptual change and procedural conceptual change. Acquiring the threshold concepts in each of the three phases allowed the student to progress to the mastering of the discipline. The third concept is 'emotion and motivation'. This concept incorporated the used of the Self-Efficacy Theory of Motivation coupled with the Myers-Briggs Type Indicator and Eysenck Personality Theory. This was elaborated on in Chapter Three.

2.7 Conclusion

This chapter described the learning paradigm chosen, as well as why this study implemented the use of a theoretical framework. The characteristics that comprised the theoretical framework were used as a tool to inform the thinking throughout this study. The high-levelled explanation of the phenomenon under investigation was conducted with the use of the various concepts explained above. This theory allowed for the development of the research questions necessary to generate and analyse data, as well as for the selection of the literature review themes outlined in the next chapter.

CHAPTER THREE
LITERATURE REVIEW

3.1 Introduction

This chapter describes the four key literature themes identified relevant to the study. The first theme is a review of the preconceptions of the non-major accounting students in the pre-liminal phase of their learning journey. The second theme is a review of the students' learning of a new way of thinking from the effective teaching of discipline experts using the Threshold Concepts Theory. The third theme is a review of the affective component of one of the characteristics of the Threshold Concepts Theory, "troublesomeness". The fourth theme is a review of the remaining liminal phases of the learning journey to the progression of the mastery of the discipline, with emphasis on the affective component of the learning journey.

3.2 The Preconceptions of Non-Major Accounting Students Learning Accounting 101 in the Pre-Liminal Phase of Learning

Preconceptions in the Pre-Liminal Phase of Learning

"Curiosity often leads to trouble..."

(Carroll, 1951, 6:00)

The Threshold Concepts Theory used the term 'liminality' to describe the place in which a student learns how to master a threshold concept (Meyer & Land, 2006). Liminality can be traced back to Vygotsky's (1978) teachings that spoke about taking a student from what they know, their actual ability, to what they can know, their potential ability in a space called the zone of proximal development. Turner (1969) built upon van Gennep's (1960) three stage model of "rites of passage" or "transition" where the process of liminality is described as separation, margin and aggregation (Turner, 1969, p. 359). The preconceptions that the non-major accounting students possessed prior to entering the classroom, in the pre-liminal phase of learning, are discussed in this theme.

Since the 1960s, a deep-seated feeling of negativity (Fisher & Murphy, 2006) has surrounded the connotation of being an accountant. The perception and status of the profession of an accountant has been viewed with ambivalence. A study consisting of two groups of students, accountants and non-accountants (Fisher & Murphy, 2006), yielded the perceptions of both groups; low esteem was juxtaposed with high status, perhaps as a result of sociological and historical factors. Much earlier, a career guide published in 1908 warned against the "brightness and movement of university to the drudgery of a first year's accountant clerk is a severe strain and may disgust a man" (Dore, 1976, p. 23). The Thatcher period provided the accountant with a makeover, one that no longer viewed the profession as "pathetic", but as "sinister", "powerful" and "exciting" to an extent, although it still maintained the original, overall negative connotation. The group of non-accountants in the study exhibited a natural aversion to the accounting profession and viewed the accountant as dull, boring and unethical. Despite this long-standing antipathy towards accountants, the profession at large still attracted a high percentage of graduates.

A later study investigated the "best and brightest issue" (Azevedo & Sugahara, 2012, p. 1), the negativity and "unpopularity" of the profession of an accountant amongst the brightest tertiary level students. This best and brightest issue was a present-day version of the career guide published in 1908, as tertiary level students are still being cautioned more than a century later against the narrowness of the profession and are being encouraged to demonstrate not only technical competence, but skills of creativity, exercising of judgment, beneficence, and a sense of fulfilment (Behn et al., 2012), both personally and professionally. These recommendations that accounting students are encouraged to make were as a result of the guidance set out in the Commission on Accounting Higher Education: Pathways to a Profession. This study investigated the perceptions and the accompanying cognitive style associated with that of the accounting profession. The perceptions any one individual develops can be attributed to the social information gathered from sources such as news clips, magazines, movies, word of mouth. The age-old label of a "boring bean counter" aptly described the stereotype created by this social information, bringing with it a sense of limited creativity and interest. The incidence of fraud and failure over the years also brought much disrepute (Azevedo & Sugahara, 2012, p. 4) to the profession, despite accountants traditionally being seen as highly ethical in their field.

The Threshold Concepts Theory also has many studies that have acknowledged “ingrained attitudes” (O'Mahony et al., 2014, p. 177) towards certain disciplines. This study demonstrated that the attitudes of students in the discipline of mathematics are also supported by stereotypical viewpoints influenced by global events that have occurred over time from popular culture, thus implying that these ingrained attitudes and the Threshold Concepts Theory are interrelated. A further mathematics study involved students exhibiting anxiety towards mathematics as they felt that they could not complete mathematic problems. Their failure to perceive the relevance of numeracy (Meyer et al., 2010, p. 147) in their academic programme, resulted in, for example, the disciplines of mathematics and statistics being viewed as disconnected from their programme. This perceived disconnection from the programme as a whole, resulted in students then disengaging from the learning process at the point of entering the liminal phase, as they affirmed “I can’t do maths” or that “maths is boring”. The inability to move beyond their anxiety regarding the discipline at the outset meant that a student would run the risk of either failing or withdrawing from the discipline, thus remaining in the pre-liminal phase. A study conducted in a first-year statistics cohort also involved students exhibiting the same level of anxiety towards numeracy, and raised additional issues of low attendance, limited engagement and an overall lack of motivation (Khan, 2014).

In addition to the anxiety that some students possessed towards a discipline prior to entering the classroom, they may also possess preconceptions pertaining to troublesome concepts (Meyer et al., 2010) in that particular discipline. It is a very fruitful exercise to identify the preconceptions based on stereotypes prior to entering the classroom, as well as the those that arose during formal instruction as these may not be consistent with the scientific knowledge of the discipline. The preconceptions one possessed in the pre-liminal phase may be highly resistant to the change introduced during formal instruction in the liminal phase, regardless of repetitive nature of delivery.

The negative preconceptions of students caused by issues such as stereotypes, a strong media presence, ethical breakdowns in the profession etc., may also be reinforced when a student embarks on the university journey and is exposed to mandatory introductory disciplines taught to a large classroom of students. Students may also feel that these introductory accounting classes are boring (McGuigan & Kern, 2010) and they may fail to grasp the importance of the discipline in the real world. This “perceptual threshold” (McGuigan & Weil, 2010, p. 2) can be

overcome if the right attitude is promoted by discipline experts in order to receive the right academic change. A heightened understanding of the epistemological features of the discipline may be obtained once the curriculum is redesigned in such a way as to accommodate for all thresholds, including the preconceptual ones, so that students are in a position to deal with any discipline barriers.

A study in the programme of Tourism and Hospitality involved discipline experts using phenomenology to deeply understand the "threshold barriers" (Gronow & Morrison, 2017, p. 1) that students encountered when learning introductory accounting. These non-accountants also possessed negative preconceptions of the accounting discipline as they found it to be difficult and boring. Discipline experts were then put in the position where they had to recontextualise their perceptions (Meyer et al., 2010), as well as these threshold barriers i.e. epistemological barriers, by translating the accounting jargon in order for the students to grasp the meaning in the English context first before taking the next step of transforming a student's everyday view of the concept to the academic viewpoint. The everyday view that a student possessed regarding the introductory accounting class will differ greatly from the worldview of the discipline expert. This discipline will create further negative preconceptions for students, as in addition to the negative worldview students already entered the classroom with, the very large student numbers, the rigid, rules-based (Meyer & Land, 2006) nature of the course, the fact that this course is compulsory and that it is not the student's chosen major, are additional factors that would result in greater feelings of aversion towards the discipline, proving that introductory accounting still remains a challenging discipline to students (Meyer et al., 2010).

The two types of negative preconceptions are also known as threshold barriers (Meyer & Land, 2006, p. 156). The first barrier related to the negative preconceptions that students have prior to even entering the classroom. The second barrier related to the worldview of the student, the naïve, everyday understanding of the concepts. The third barrier related to the students' reluctance to accept the inherent "uncertainty and subjectivity" that came with the introductory accounting discipline. This acceptance is a prerequisite for perceiving the organising framework of the discipline and not just the rigid learning technique (Brunetti et al., 2014), that will ultimately result in a much-needed ontological shift of the worldview of the student.

Non-Major Disciplines

"Boring", "different" and "unethical" (Fisher & Murphy, 2006, p. 48) are some of the words used to describe accounting over the years. These preconceptions that non-major accounting students enter the classroom with are based on for example television, movies, and the global events that have occurred over time from popular culture (Miley, 2005). These stories and odd historical events are not a true reflection of the profession and as such, non-major accounting students should be educated about the benefits of the profession when used correctly. Hopefully then, once the attitudes of these non-major accounting students, as well as the accounting students have changed, they can then view the accounting discipline with fresh eyes. This attitude shift was imperative as student perceptions influenced the approach to learning a student adopted, that is deep or superficial in nature, which in turn directed the quality of learning, being the learning outcomes of the discipline. Another reason a shift in attitude was imperative was because student perceptions influenced the career path and the corresponding major disciplines the student chose to follow (Mladenovic, 2000).

The role of a non-major discipline in a programme has been questioned over the years. The programme of computer sciences argued that a conceptual understanding of one of their non-major disciplines could actually be grasped without a student learning the non-major discipline. This particular programme of computer science was a constantly changing one and the non-major discipline was seen to be redundant as the computing future was not stable (Urban-Lurain & Weinshank, 1999). The learning strategies of non-major chemistry students with limited chemistry knowledge had an impact on their attitude and motivation to learn a non-major discipline. Learning strategies such as re-writing and memorising notes could be used to assist discipline experts when teaching the discipline (Chittleborough et al., 2005). The strategies of re-writing and memorisation, for example, can be used to describe surface learning, as most students are found to be in a suspended state in the liminal phase of the threshold concept journey with an understanding that resulted in mimicry. The relationship between the learning environment and student performance was investigated in a non-major biology course. The most pertinent factor was the "personal relevance" (Partin & Haney, 2012, p. 103) of the non-major discipline, which subsequently impacted student performance, motivation and attitudes towards the discipline, which were generally negative in nature.

These negative preconceptions that prevented students from learning effectively were seen as obstacles in a student's path. Issues like an overloaded curriculum, language, discipline concepts etc. can be seen as obstacles to students who have English as both their first or second language (Foundation et al., 2013). Researcher Jeremy Kilpatrick highlighted these language obstacles specifically from the point of view of "translation" (Radford, 2016, p. 32), by suggesting that translation did not only extend to language, but went deeper. This goes back to the recontextualization that was imposed on discipline experts to firstly translate the accounting jargon into terms that are understood by all students, before moving to the primary step of transforming the worldviews of the student to match that of the discipline.

Epistemological Blocks

"Oh dear. It's getting dreadfully dark and nothing looks familiar..."

(Carroll, 1951, 52:11)

"Epistemological obstacles", however, referred to knowledge that has been presented and rejected by a student in a different form (Artigue, 2001, p. 201). Artigue further went on to say that epistemological obstacles are normally due to "cultural factors" (Radford, 1997, p. 28) identified throughout history which are responsible for the obstacles in the current learning activities of our time. These cultural factors are not limited to the initial negative preconceptions possessed from a variety of sources already mentioned, as well as the knowledge discipline experts posed to a traditionally diverse cohort of students in the introductory accounting class. The epistemological obstacles (Balibar, 1978; Gascon & Nicolas, 2017) that discipline experts present, are those that prevented students from experiencing a transformed perspective (Meyer & Land, 2006) and therefore caused students to remain stuck. They differed from ontological obstacles and it is the hope of researchers and discipline experts to devise (Meyer & Land, 2006) methods to assist students to master such epistemological obstacles. Discipline experts have endeavoured to identify (Land et al., 2005) the cause of the epistemological obstacles to student learning in order to assist students to move out of the liminal phase to the mastery of the discipline concepts. Another term found in the Threshold Concepts Theory body of knowledge is that of 'bottlenecks'. This term was also used to describe the epistemological obstacles that students encountered when learning. A study conducted by Leah Shopkow implied that affective issues (Land et al., 2016) were common bottlenecks in a student's learning journey. The characteristic 'troublesome knowledge', found in the theoretical framework, related to discipline knowledge that students

found to be "weird, illogical, counter-intuitive, unsettling and alien" (Land et al., 2016, p. 28), and also had the effect of causing the student to remain stuck at that point in the curriculum. Possible solutions to assist discipline experts to identify these epistemological obstacles or bottlenecks would be to use the process of "decoding the disciplines" (Middendorf & Pace, 2004, p. 2). This process can be used to deeply investigate the processes of the discipline and to reflect on the personal learning experiences of discipline experts or a team of tutors in order to understand (Cronin, 2012) why students found themselves stuck at particular points in the curriculum, and therefore how best to assist students to overcome them (Wuetherick & Loeffler, 2013) based on these experiences.

3.3 Learning a New Way of Thinking with Effective Teaching

"I'm curious to know where he's going..."

(Carroll, 1951, 14:43)

A threshold concept is "akin to a portal, opening up a new and previously inaccessible way of thinking". A threshold concept can also be seen as a "transformed way of understanding" that a student cannot progress without. This implied that the view a student has, be it an internal or a world view, will be transformed at the pace of the student, suddenly or over time. This transformation period was seen to be troublesome and demonstrated how students think (Meyer & Land, 2006, p. 3). The words 'transformed' and 'troublesome knowledge' are characteristics of a threshold concept therefore making threshold concepts a way of defining a "way of thinking". To further elaborate on the applicability of the characteristics of a threshold concept to a "way of thinking", the characteristic of 'irreversibility' was discussed. This characteristic implied that a student is unlikely to revert to their initial perceptions after the transformed perception that they have gained. The 'integrative' characteristic was critical to the 'transformative' and 'irreversible' characteristics of a threshold concept. The procedures of the discipline resonated with a student once a threshold concept was acquired. Lastly, the 'bounded' characteristic defined the scope of a discipline (Meyer & Land, 2006).

3.3.1 Phenomenon

This qualitative study drew upon the principle of interpretivism as the approach to research, as the reason for the research was to attempt to deeply understand the phenomenon and to describe meaning that was socially constructed (Baxter & Jack, 2008). The phenomenon of the study was non-major accounting students' learning of Accounting 101. The purpose of this study was to understand why these non-major accounting students learned Accounting 101 in the way that they did. The approach to this research study was that of the Objective Deductive approach, which is a type of research that used experiments (Varpio et al., 2020) to test the assumptions that the researcher had about how the phenomenon worked with the use of research questions relevant to the phenomenon under review.

The instrument that would allow for the development of the necessary questions surrounding the phenomenon of learning, in order to both generate and analyse the data collected, needed to be carefully selected at the commencement of the study. The instruments needed were the concepts from a high-levelled explanation of the phenomenon under investigation, a theory, relevant to the phenomenon of learning. This study used the concepts from the original Threshold Concepts Theory from 2003 by Meyer and Land and another from 2016 by Timmermans and Meyer, to explain the phenomenon of student learning with the resultant concepts creating a framework, theoretical in nature and specific to this study.

The primary purpose of a theoretical framework was to provide the researcher with a tool to investigate the phenomenon and the meaning, nature and challenges associated with it, therefore providing a deeper understanding of the phenomenon being investigated (Lynham, 2002). The theoretical framework served as a lens that the phenomenon can be viewed by indicating that the theoretical framework utilised should be able to explain how each of the concepts in this lens was perceived. This provided an explanation for the experience gained regarding the phenomenon of the research study. One can then use the explanations and understandings obtained from the explanations, to act in a more informed and therefore improved way going forward regarding the phenomenon and quality and relevance of the research undertaken.

Higher education institutions (Watty et al., 2013, p. 462) aspired to have all their graduates meet the minimum "learning threshold standards" when exiting. These "learning threshold standards" or learning outcomes were responsible for the introduction (Meyer & Land, 2003) of the Threshold Concepts Theory. The notion of a threshold concept emanated from discussions on learning outcomes with the purpose of examining a set of discipline-specific learning outcomes with the intention of classifying them into two groups: the learning outcomes that have the effect of enabling a student to view "things in a new way", which will shortly be discussed in more detail; and those learning outcomes that do not serve that purpose. In order for the Threshold Concepts Theory to make a noteworthy contribution (Meyer & Land, 2006, p. 82) to student learning, these discipline-specific learning outcomes that enabled students to view "things in a new way" must not only be identified by discipline experts, but identified using a method that is different from the conventional methods employed to the conceptual structure of the discipline. Discipline experts are further tasked with the responsibility of identifying the means and methods to aid students to explicitly perceive learning outcomes that would otherwise normally be viewed as tacit.

The identification of these discipline-specific learning outcomes that enabled students to view "things in a new way", or "threshold concepts", has proven to be a difficult task. This identification was of crucial importance as threshold concepts brought with it, the potential to significantly impact (Barradell, 2013) student learning experiences. The fundamental purpose of threshold concepts was to formulate conceptual frameworks aimed at the quality of learning attained. This conceptual framework investigated concepts that explored the means and methods of teaching and the student understanding related to these teachings. The focus of this exercise was to determine what exactly students were required to understand and learn, and the ways of thinking employed by discipline experts.

The dilemma (Meyer & Land, 2006) regarding the identification of discipline-specific threshold concepts was cause enough to promote discussions amongst discipline experts to then reflect on their own experiences that they encountered when learning the chosen learning outcomes, or threshold concepts, and how they now subsequently perceived them after negotiating the threshold. These discussions resulted in discipline experts documenting their constructed (Davies, 2012) understandings of the world, i.e. modelling concepts, that have the purpose of assisting a student to understand the way in which these discipline experts' understandings are constructed, therefore providing students with access to the discipline-

specific threshold concepts. The process of student understanding was that of a gradual one with possible difficulties and uncertainties experienced during the liminal phase, the period in which a student was trying to grasp a threshold concept. Once a student developed an expert view of understanding the threshold concept, this will have the ripple effect of improving the understanding of subsidiary parts that may not have been fully grasped. The fully grasped learning outcome at completion was therefore not the primary goal of the threshold concepts theory, it was rather the process (Meyer et al., 2010) of understanding and learning that a student negotiated during their learning journey. The value that the Threshold Concepts Theory brought to the world of academia was that it explored (Meyer et al., 2010) the challenges students faced during the learning process and focused on trying to understand the students' experiences regarding the learning, understanding and application of a threshold concept that had the effect of hindering (Lloyd & Frith, 2013) the progress of other concepts, be it threshold or subsidiary in nature, due to the difficulty encountered.

Discipline experts can gain further insight into the learning difficulties students encountered when trying to acquire the threshold concept, if they conducted an analysis of student responses (Meyer & Land, 2006) from completed assessments, for example, as this will accurately reflect the position the student was at in the learning journey. These student responses indicated that a student has not "internalised" (Meyer & Land, 2006, p. 195) a threshold concept, resulting in a student's approach to learning the discipline in a fragmented manner. There are students who may however grasp these threshold concepts with an internalised point of view, but may fail to grasp concepts at a "deeper level of understanding", resulting in a student struggling to comprehend the 'underlying episteme' (Meyer & Land, 2006, p. 197), a term by Perkins, referring to the manner of explaining the outcomes.

Perkins' forms of troublesome knowledge demonstrated learning impediments to students too. The second form of troublesome knowledge is "inert knowledge" (Meyer & Land, 2006, p. 10). This type of knowledge is a bank of knowledge that is passive in nature, with the knowledge acquired being understood, but not applied in an active manner as students learned procedures but failed to see the connection that they have to the real world. The third form of troublesome knowledge is "conceptually difficult knowledge". This type of knowledge is a bank of knowledge that presented a student with a mix of misunderstandings of the conception of everyday knowledge. This meant that students learned ritual knowledge, but their intuition sometimes overrode the conceptually difficult knowledge. These numerous perspectives

(Meyer, 2008) of learning determined how threshold concepts and Perkins' troublesome knowledge are perceived and that each student's point of view had a different implication dependent on the learning perspective experienced. A recursive method of approach in relation to the learning perspective of a student may be assumed, which allowed a student to encounter a rhizomorphic (Meyer & Land, 2006) experience, being the usage of multiple points of entry to learning until the student has comfortably negotiated a connection or integration of the threshold concepts. Once a student successfully understands a threshold concept and has navigated through the liminal journey, this will result in the enhanced learning and understanding of the discipline, with the ultimate effect of also integrating this enhanced learning with a more valuable curriculum design focused on a richness of depth and a "lack of breadth" (Khan, 2014, p. 218), directing emphasis to the threshold concepts that allowed a student to view "things in a new way" in the relevant discipline. These threshold concepts, also referred to as the "jewels in the curriculum" (Meyer et al., 2010, p. 75), can be used as the focal point for learning tasks at a programme level as opposed to the onerous learning outcome level employed per discipline.

3.3.2 Ways of Thinking

"A little of that went a long way..."

(Carroll, 1951, 9:54)

There is a notion that a student's understanding of a discipline can be unfolded in three different ways (Meyer, 2008) that will prove to be fruitful when looking at the threshold concepts of a discipline and the ways of thinking attributed to that discipline. Firstly, that of the use of basic concepts at the commencement of the discipline; secondly, that of the use of integrative threshold concepts; and thirdly, that of the discipline-specific ways of thinking.

A threshold concept is "considered as akin to a portal, opening up a new and previously inaccessible way of thinking" (Meyer & Land, 2006, p. 6). The Threshold Concepts Theory provided discipline experts with a "fresh" new way of thinking (Cousin, 2010, p. 1) about pedagogic research with students, other discipline experts and educational researchers resulting in a new paradigm called transactional curriculum inquiry amongst these parties involved. The advantage of using threshold concept research is that discipline experts need not learn another discipline in conjunction with their existing one, but this research instead promoted discipline

experts to deeply examine their disciplines with the intention of devising the most effective ways of teaching and learning it in partnership with the three parties.

This identification of threshold concepts originated from a conceptual framework (Entwistle, 2008) that investigated critical concepts that had the effect of determining how teaching was conducted and how student understanding evolved within the discipline under examination. The purpose of this investigation was to determine what exactly students were required to understand and learn and the ways of thinking and practices (Barradell, 2013) employed by discipline experts. This ultimately meant that the schools of teaching and learning will find this "fresh" new way of thinking that threshold concepts has to offer an appealing one, as it resonated (Meyer & Land, 2006) with many similar aspects that teachers experienced, and the specific ways of thinking and specific ways of practising, that are otherwise left tacit in teaching and learning, but made explicit with the incorporation of threshold concepts.

The schools of teaching and learning are provided with three options when facing the challenge of defining a specific way of thinking. The first way involves the application of key concepts (Meyer & Land, 2006) of a discipline. This way has two ranges of ideas that can be attributed to it. The first range states that some concepts are uniquely key to a discipline based on the history and future of the discipline. The second range is based on Bruner's application of the Piagetian Theory, in 1960 and 1966, to disciplinary understanding and curriculum design. The second way involves phenomenography and the variation in ways of understanding. Phenomenographers defined specific concepts in terms of relationships between an individual's thoughts and the worldview through which they experienced these thoughts. This in essence meant that concepts are viewed as relational as opposed to being the inherent (Meyer & Land, 2006) thoughts of the student. The third range is the use of the Threshold Concepts Theory, with the use of the initial five characteristics having the effect of "joining a community" (Meyer & Land, 2006, p. 74).

A study completed in the discipline of economics has utilised the third range, the use of the Threshold Concepts Theory. Discipline experts in this study did not endeavour to create a conclusive list (Davies, 2012) for two reasons: the application is still relatively new and more research on the development of the Threshold Concepts Theory is yet to be undertaken in this discipline; and the appeal of the Threshold Concepts Theory is that it provided discipline experts with the means to think about the progression of the understanding of the discipline of

economics. Using threshold concepts to effectively (Meyer & Land, 2003) design a learning environment in the chosen discipline has proved to be a problematic issue that discipline experts faced, as well as the incorporation of a way of thinking and a way of practicing using the relevant characteristics of the Threshold Concepts Theory. As the most dominant effect a threshold concept brought about was that of transformation, the further effect was that they may also be seen to be troublesome to students when they are grasping the concept in the liminal state and hence the understanding resembled a form of mimicry.

As mimicry of troublesome knowledge was strongly discouraged, a focus on the requirement of "active student engagement" (Meyer & Land, 2006, p. 199) was strongly recommended to assist students to fully grasp a sound understanding of the troublesome knowledge. A focused example of this recommendation would be asking tutors to facilitate tutorial sessions that created an environment that firstly allowed students the opportunity to explain the troublesome knowledge and to then elaborate on these explanations in new ways and new situations that they can mirror to their own lives. This process of thinking and practising can also be incorporated as a framework that students can apply to every piece of troublesome knowledge that they encounter. The responsibility to develop this framework of the ways of thinking lay with the discipline experts, who exposed these ways of thinking by carefully identifying and analysing any and all troublesome areas (Blackmore & Freeland, 2014) within their discipline. These ways of thinking defined the route for the journey from "novice to initiate" (Devitt et al., 2012, p. 1) disciplinarian, depending on the degree of exposure. These coveted ways of thinking were then utilised to identify the threshold concepts of the discipline. Once the discipline experts explicitly detailed this process, they can then go on to closely assist (Meyer & Land, 2006) students on how to identify this discipline-specific way of thinking and practising. The purpose of the Threshold Concepts Theory was ultimately to equip students with the tools to easily identify threshold concepts. An issue that discipline experts encountered when making threshold concepts explicit from the beginning, was the high level of abstraction, that was an inherent result of threshold concepts, that have the effect of integrating a way of thinking. An alternate viewpoint to this issue was to introduce these distinct threshold concepts that have the effect of integrating a way of thinking at a much later stage in the student learning journey, when adequate discipline knowledge has been obtained.

This way of thinking in a discipline acted as a further threshold for students that was transformative (Meyer, 2008) in nature. The existing requirement of the characteristic of a threshold concept, 'transformative', had the effect of integrating basic concepts to act as a portal that unlocked the discipline in a fundamental manner in order to be aligned (Meyer et al., 2010) with a framework that typified a distinct way of thinking within the discipline. An initial investigation was performed on a discipline by discipline basis in order to utilise the framework of the ways of thinking and practising in order to identify discipline-specific threshold concepts. There have been recommendations to utilise this framework of the ways of thinking and practising with discipline experts external to the specific discipline under review, resulting in an "outward facing" perspective (Brunetti et al., 2014, p. 3) on the framework implemented, to then perhaps investigate the effects of an interdisciplinary framework regarding the ways of thinking and practising across disciplines.

3.3.3 Effective Teaching

"Eat me. Alright. But goodness knows what this will do..."

(Carroll, 1951, 9:42)

The first concept from the theory by Timmermans and Meyer in 2016 related to effective teaching. Literature on effective teaching indicated that it was used to promote student learning in a threshold concepts environment. This new Threshold Concepts Theory pedagogy was ripe with opportunity for discipline experts to impart their experiences in a deeper way using their specific ways of thinking and ways of practicing in their discipline in order to effectively teach it. This train of thought went hand in hand with the age-old quote "to better understand, teach it!" (O'Mahony et al., 2014, p. 171). This firstly required the discipline expert to identify (Meyer & Land, 2006) the threshold concepts in their discipline in a way that was different from the traditional approaches. The identification of these threshold concepts can be an arduous task (Decker, 2006) as this is a very subjective decision that could change the course of teaching in a discipline. This style of teaching, also known as "conception-based" teaching, directed students to determine how meaning was derived and provided students with the opportunity to consolidate factual information into a context. This had the effect of having concepts form the foundation of a student's understanding and not facts (Burch et al., 2015).

Transactional curriculum inquiry, the paradigm that used a partnership between discipline experts, students and educational specialists, was a rich approach for identification that supported understanding. The schools of teaching and learning have also partnered with the ideas that the Threshold Concepts Theory provided to direct their energies towards the experiences gained (Land et al., 2016) during the teaching and learning journey. The most significant shift in teaching in recent years has been the movement away from teaching (Kandlbinder, 2014) to a more student-driven approach, which the Threshold Concepts Theory and the chosen methodology, Interactive Qualitative Analysis (IQA), also support.

Accounting 101 has been taught with minimal to no focus on the theoretical pillars, with attention instead on procedure or teaching technique (Lucas & Mladenovic, 2007) when addressing the negative preconceptions of the cohorts of major and non-major accounting students. The purpose of the Threshold Concepts Theory was to encourage discipline experts to elucidate and prioritise the learning outcomes of a discipline so as to generate a discipline-specific set of threshold concepts. A further purpose of this task was to create an environment in which discipline experts could communicate (Brunetti et al., 2014) about their teaching practices. Once discipline experts were confident that they had spent sufficient time communicating their views regarding their teaching practice, they could then take a step further and compare their views (Mladenovic, 2000) with those of a cohort of accounting students. The perceptions (Meyer & Land, 2006, p. 149) of the accounting students differed greatly from that of the discipline experts once "focus groups, interviews and surveys" (Hoadley et al., 2015, p. 63), for example, were utilised to gauge this, and this gap in perceptions between the two parties was a gap in the body of literature that needed to be addressed going forward.

A primary reason for the difference in perceptions between discipline experts and students is that students faced barriers to learning that left them "stuck" (Meyer & Land, 2006, p. 195) in a discipline. These learning barriers or epistemological blocks are the predominant concern of discipline experts as students who remained in this suspended state of being "stuck" will never be able to fully understand the learning outcomes of the discipline. Discipline experts should then investigate the ways in which their students learn so as to effectively assist them by organising the educational process (Meyer, 2008). At the same time, these discipline experts should direct students to focus on the concepts that would probably create epistemological blocks to learning and hence prevent students from traversing the threshold (Meyer, 2008). Even though this effective teaching practice has been identified by Meyer and Land, it has

unfortunately not gained sufficient traction in the field of education research in conjunction with the discipline under investigation. The reason is perhaps that in addition to having a deeper understanding of the discipline content (Mills & Wilson, 2014), the discipline expert must also conduct an analysis of each learning outcome in order to determine which qualified as a discipline-specific threshold concept and ultimately a barrier to student learning.

The discipline expert was responsible for creating an environment that was conducive to supporting learning activities that promoted the achievement of the learning outcomes of the discipline (Biggs, 2003). This effectively meant that with the use of the Threshold Concepts Theory, discipline experts created an environment that allowed the achievement of the learning outcomes that possessed the characteristics of the Threshold Concepts Theory, the grasping of the threshold concepts specific to the discipline. In order for discipline experts to effectively and efficiently use the Threshold Concepts Theory, they needed to attend professional development courses (Mills & Wilson, 2014) in order to obtain the relevant skills to utilise the Threshold Concepts Theory. The investment in this type of pedagogy at academic institutions was a fruitful one as it has thus far proved to be a pedagogy that enhanced the student learning and understanding of a discipline. The procedure that discipline experts must follow in order to achieve improved student learning and understanding was a deceivingly simple one (Shanahan et al., 2016). It merely required the discipline expert to deeply understand the content of their discipline, how to effectively communicate this content and to identify how this content altered the manner in which students perceived the world. This form of pedagogy required discipline experts to formulate an environment conducive to students not only understanding a threshold concept, but also crossing it, thereby creating a link between the two steps in order to achieve true mastery and interdisciplinarity where needed, of the threshold concepts and ultimately, the discipline. Discipline experts faced further challenges when students “side-step” around the existing troublesome concepts (Ryan, 2014), as opposed to crossing them, resulting in a student only gaining an understanding of the threshold concepts.

The discipline expert had to commence with the perceptions of the discipline content. It was found in a study that the perceptions of some students differed greatly to that of the discipline experts (Meyer & Land, 2006), and that this difference in perceptions between the two parties is due to the tacit knowledge of both the students and discipline experts. Tacit knowledge is the type of knowledge that one has acquired over their lifetime via learning processes as a result of past experiences, memory recall, etc. in both every day and professional life. The drawback

of the perceptions of student and discipline experts' tacit knowledge was that the presumptions of both parties can be severely overlooked like that of a "conceptual submarine" (Meyer & Land, 2006, p. 40), with the solution being that discipline experts now also have the responsibility of making this tacit knowledge explicitly known in order to avoid misunderstandings in the discipline.

In this case, discipline experts will have to assist students to identify threshold concepts. The use of the Threshold Concepts Theory was an appealing pedagogy that resonated with that of teaching and learning as they both involved the incorporation of the experience of discipline experts, of the ways of thinking and ways of practising, that were normally left tacit in teaching and learning. The purpose of the Threshold Concepts Theory was, at the outset, to have discipline experts explicitly equip students with the methods in order for them to easily identify threshold concepts and the ways of thinking and practicing associated with them in a discipline. A challenge that discipline experts faced when making threshold concepts explicit, is the high level of abstraction that some threshold concepts possessed as they had the effect of integrating a way of thinking. An opposing solution to this issue was to introduce these threshold concepts, that have the effect of integrating a way of thinking, at a much later stage in the student learning journey, when the requisite discipline knowledge has been obtained. Once the discipline expert has taught a student adequate knowledge, the student will then be in a position to decide which concepts possessed an integrative role. Once a student perceived the possible connections between concepts, the discipline expert then had to re-interpret the ideas that the student entered the classroom with. If this mammoth task failed, then a student will be left in a confused position outside of the discipline. This required the discipline expert to then go a step further and devise ways of guiding the student to move from what was left tacit to expressing it explicitly. Navigating through this laborious process ensured that a student actually gets what a threshold concept is as opposed to the student learning these threshold concepts in a rote fashion if they are put forth too early (Meyer & Land, 2006).

Discipline experts needed to commence with an analysis of their discipline content in order to determine which learning outcomes are considered to be troublesome knowledge (Karunaratne et al., 2016), and therefore seen to be the threshold concepts of a discipline, and then to determine the most appropriate manner in which to make this troublesome knowledge less troublesome in the student learning journey. This directed focus on troublesome knowledge, be it conceptually troublesome or emotionally troublesome, enabled discipline experts to

formulate a directed focus on their teachings of the discipline (Cousin, 2006). Once this focus was formulated, the discipline experts then assessed the procedures that they applied to their teaching as well as the learning outcomes (Meyer & Land, 2003), in a more critical manner. The introduction of this pedagogy had the effect of aiming the discipline expert towards the creation of a conceptual framework that explored the methods of teaching and student understanding instead of just blandly applying teaching techniques only (Meyer & Land, 2006). The conventional teaching technique to generally teach all discipline content in one go as swiftly as possible with a review thereafter is rejected in the threshold concepts teachings (Frank, 2006) and instead focused on the conceptual framework that explored the methods of teaching, student understanding and practising (Cousin, 2008).

The starting point for discipline experts using threshold concepts for the first time to investigate troublesome knowledge would be to undergo a journey of self-reflection in order to determine how they themselves encountered the learning of these troublesome concepts as well as how they currently perceived the troublesome knowledge after negotiating the threshold (Meyer & Land, 2006). Once the discipline expert completed this journey, they will then be perceived as a hero whose purpose was to return to the field (Fortune et al., 2012), with a revolutionised perspective ready to impart the lessons learned. The purpose of this self-reflection therefore promoted an environment of meta-learning for the discipline expert as the experience gained is not something to be learned from, but rather the reflection, or self-reflection of the experience, which is then imparted to students to guide them throughout their journey of negotiating the threshold (Easdown & Wood, 2012). The "approach to learning" has been recognised as a threshold concept for discipline experts when they shared their personal experiences with students in their teaching of the discipline in order to facilitate student understanding. This discipline expert specific threshold concept can be likened to that of the ways of thinking regarding the teaching of a discipline (Meyer, 2008). Once the discipline expert has completed this journey of self-reflection, they will also have to empathise with the perspective of the student and how they encountered the understanding and learning of troublesome knowledge within the pre-liminal and liminal space. This empathy required the mindset of discipline expert to be altered in order to fully understand why the student was hindered when advancing towards the portal and when navigating the portal. This process of empathising and viewing the discipline content from the perspective of the student, resulted in discipline experts adjusting their initial perceptions after being confronted with the student's misconceptions (Meyer et al., 2010). This process of re-envisioning the teaching and learning

of a discipline with the incorporation of the perspectives of the discipline expert and that of the student, guaranteed that the discipline expert was cognisant of the interconnection between the epistemological, being the characteristic of student learning that explored exactly what a student learned and the manner in which this learning took place and ontological, the characteristic of student learning that explored the changes of the worldview of one's self. This interconnection had the effect of assisting discipline experts to understand the obstacles that students encountered when progressing to the mastery of a threshold concept, by revealing student perspectives that are transfigured when they utilised the threshold concepts to assist them to identify further interconnections (Peter et al., 2014).

This initial method of effective teaching can be taken a step further by incorporating the views of the colleagues of the discipline expert, thereby expanding on the number of heroes. An open dialogue (Cronin, 2012) with the discipline expert's colleagues regarding the examination of the discipline-specific threshold concepts allowed all discipline experts to document their teaching procedures thereby divulging the assumptions that they possessed regarding the way in which their students approached the learning process. The outcome of this dialogue was for all the discipline experts to reach consensus regarding which method best fitted the student understanding of discipline-specific threshold concepts. Once the best method for student understanding had been selected by the cohort of discipline experts, they could conduct interviews to identify the troublesome discipline threshold concepts as well as any potential relationships amongst these concepts that have the effect of integrating knowledge (Meyer, 2008). This deep integrating effect that some threshold concepts possessed in a discipline is a further troublesome feature that some discipline experts perceived as implied knowledge and therefore failed to make this integrating effect explicit. The remaining characteristics of a threshold concept were seen as the 'key' characteristics of a threshold concept that opened the portal that the student needed to understand and successfully negotiate with the guidance of the effective teaching methods employed by the discipline experts. The value of the sharing of the recommendations and experiences of individual discipline experts in a forum has not been recognised, as not much emphasis has been placed on self-reflection (Lucas, 2011) and the documentation thereof. This method can prove to be more valuable if conducted on a larger scale, perhaps with the participation of academic institutions country-wide, or even world-wide.

In their teaching of the content of the discipline, discipline experts firstly identified the threshold concepts and then communicated these individual threshold concepts in a simplified version (Davies, 2012). The issue with this method of teaching is that a threshold concept is not one that can be articulated in a simplified manner to novice students. A novice student needed to be taught the full complex version with an initial understanding being provisional in nature before they can perceive the threshold concept or "big idea" in its entirety. The rationale behind teaching a threshold concept in this manner was that a student may never fully understand the big idea behind the threshold concept initially or at all. A prior study utilised a variety of teaching methods and continuous exposure to the threshold concept in order to enhance student understanding (Harlow et al., 2014) and therefore ensured that a student mastered the discipline, as is the case with the non-major discipline of Accounting 101. For those disciplines a student selected as a major, it then became imperative that the student grasped all the threshold concepts in their first year of study in order to progress to the next year, so as to not experience the threshold concepts as troublesome going forward.

An easily accessible, yet time-consuming method, especially if conducted on a large scale, for discipline experts to perform would be to utilise the responses from students (Meyer & Land, 2006) in order for discipline experts to investigate the origins of the source of any barriers to learning that students encountered. This can be performed by examining each student's assessment solution to identify where exactly a student was experiencing any trouble when acquiring a threshold concept. If discipline experts are able to formulate a framework that outlined the troublesomeness of each threshold concept, then they will be in a much better position to pinpoint the place in which a student got stuck during their progression of the understanding of a threshold concept. This discipline expert-focused approach (Harlow et al., 2014) to examining how students grasped the troublesome threshold concepts of a discipline was elaborated on with the collaboration of not only the discipline expert, but other researchers too. The discipline expert utilised an assortment of effective teaching strategies in order to promote student understand and learning, which were all then evaluated by the additional party, the educational researcher, who sought to explore the perceptions of the student regarding exactly when they got stuck and which of the teaching strategies utilised assisted them to understand the threshold concept.

The most effective teaching strategies identified by the educational researcher was that of repetitive exposure to the threshold concept as well as immediate feedback after the completion of a formative assessment, in order to address the points in which the student got stuck, with the effect of the student gaining a full understanding throughout the journey to the progression of the understanding of a threshold concept. This discipline expert-focused approach to student learning can be applied by all discipline experts, as well as in interdisciplinary studies. The same researchers of this study who examined this discipline expert-focused approach, also utilised the Threshold Concepts Theory to embark on a study whereby they reviewed their existing pedagogy within their disciplines and investigated the usefulness of threshold concepts in the discipline expert's teaching and therefore the learning experiences of the student. The discipline expert used the Threshold Concepts Theory to develop an instrument called a "threshold-concept inventory" (Scott et al., 2014). This instrument was a classification of the concepts that the discipline experts believed to be important to the discipline. The "threshold-concept inventory" also had the effect of being utilised as an assessment tool that determined the extent of student understanding of the discipline's troublesome concepts of a threshold and threshold related nature. This investigation was conducted without taking into account, the numerical skills and rote learning skills of the students.

Effective Teaching Methods – Non-Threshold Concepts

Discipline experts using the Threshold Concepts Theory pedagogy are also at liberty to incorporate other effective teaching strategies utilised in the discipline of Accounting 101 for non-major accounting students, into their practice that have not been employed in prior Threshold Concepts Theory studies that have the potential to better assist students to grasp the concepts. The Threshold Concepts Theory firmly advocated the use of the theory with other teaching practices. The methods discussed next could prove to be fruitful and be used in conjunction with the Threshold Concepts Theory in future threshold concepts studies.

A study conducted with students pursuing a military career, i.e. non-accountants, who were learning accounting for the first time, were encouraged to bridge the gap between their existing military history knowledge and the newly introduced accounting knowledge with the discipline expert as the facilitator. The facilitator used familiar military history stories as a means to introduce unfamiliar accounting concepts to these non-accountants. Thereafter, the students took charge of their learning by creating their own meaning of these accounting concepts from their pre-existing meanings of military history that they had previously acquired, with the

guidance of the facilitator (Miley, 2005).

Another possible method involved a researcher who developed a teaching tool for implementation in all disciplines called “Meka’s Method”. The purpose of this innovative tool was to effectively teach students using a rigid four-step system of “researching, innovating, updating and taking feedback constantly” (Rao, 2013, p. 363). Discipline experts gauged feedback in the form of the students’ body language and adjusted their method of teaching to be in accordance with that of the students. Once the discipline “content is delivered” to the students, the structure of teaching then became a democratic one as students were encouraged to take charge of their learning by actively participating, therefore making the teaching student-driven.

Learning Spaces

Discipline experts must be cognisant of the epistemological blocks (Land et al., 2005) in their discipline so that they can free up these blocks so as to create a space that students felt comfortable enough to enter during their learning journey. These learning spaces can be opened up with the use of ‘key’ concepts. These ‘key’ concepts allowed a student access to the learning space or “portal of understanding” (Meyer, 2008, p. 143). When students commenced the learning of a brand-new discipline, they will have to adopt a new style of thought (Cronin, 2012) which will be sustained over time as they used the first stage of understanding (Meyer & Land, 2006), that of mimicry. Once the student actively engaged in this learning space (Meyer & Land, 2006), they will then move beyond using mimicry as active engagement promoted movement to the next stages of understanding.

Students also used this learning space to reflect upon and analyse their position in the learning journey. If a student encountered troublesome knowledge, they could become stuck in their learning and instead of being perceived positively as a useful, transformative place to navigate through, it is perceived as an issue. This type of troublesome learning was seen as “liquid learning” (Meyer, 2008, p. 76). Where the conventional approach to learning would follow a predetermined order, liquid learning instead promoted an uncertain curriculum that was based on an assortment of problem scenarios that did not follow the predetermined order, but rather focused on the problem aspect of the troublesome knowledge instead of the discipline content.

Currently, these learning spaces are being set up to accommodate large student numbers and to facilitate increased student interaction amongst student groups, with the incorporation of technology that promotes active student learning as well as student-centred teaching in these learning spaces (de la Harpe & Mason, 2014). Universities have had to utilise these types of transformative learning spaces during the COVID-19 pandemic as face-to-face teaching was not permitted.

Everydayness

"Your world. What nonsense!"

(Carroll, 1951, 3:01)

The focus of discipline experts has mainly been that of how students learned these threshold concepts for the purpose of mastering their assessments. As discipline experts, we equip students with the concepts that they needed from an academic viewpoint in preparedness for them to utilise them in a practical way in industry. This theoretical academic viewpoint differed from the practical everyday viewpoint (Gronow & Morrison, 2017) that a student will experience in industry as the student will then have to automatically bridge the gap between university and industry by possessing the attribute of applying the knowledge learned when out in industry. This gap between the teachings in a classroom and the everyday experiences that students will encounter in industry is rarely made explicit (Meyer, 2008) and as such students either failed to grasp why they are learning these particular discipline concepts and what purpose they served in industry (McGuigan & Kern, 2010). Universities have been encouraged to make explicit the everyday problems and the everyday solutions (Land et al., 2016), so that students are prepared to problem solve when they enter the industry versus them entering the industry with the assumption that they can automatically apply their knowledge to a problem situation.

The Enhancing Teaching and Learning (ETL) Project also identified the need to close the gap between the theoretical experiences students encountered at university and the practical everyday experiences that they will be encountering in industry so that they can think like an economist, and in this study's case, think like an accountant. This project was comprised of real-life examples for students to be exposed to in order to assess if their train of thinking had changed as a result of being taught in a Threshold Concepts Theory environment (Meyer & Land, 2006). Another later study involved discipline experts drawing students' attention to the

threshold concepts of the discipline, without initially focusing on the jargon used in that discipline so that they felt more comfortable at the commencement of learning the discipline. The project also made clear the theoretical connection of the discipline to the practical real-world practices and this had the overall effect of improving student learning (O'Mahony et al., 2014). A reason students may fail to connect the inert knowledge acquired in the classroom to the everyday experiences in industry may be due to their inability to relate to the integrative characteristic of the Threshold Concepts Theory (Meyer & Land, 2006) and hence not be able to apply the knowledge.

3.3.4 Transformative Learning

"Sorry, you're much too big, simply impassable."

"You mean 'impossible'?"

(Carroll, 1951, 8:20)

"No. 'Impassable'. Nothing's impossible. Why don't you try the bottle on the table?"

(Carroll, 1951, 8:28)

The second concept of the theory by Timmermans and Meyer in 2016 related to transformative learning. One of the characteristics of the Threshold Concepts Theory is 'transformation'. The Transformative Learning Theory, housed in social constructivism was founded by Mezirow in 1978. He based his theory on the work of Kuhn, Freire and Habermas (Freire, 1970; Habermas, 1971; Habermas et al., 1984; Kuhn, 1962). Mezirow's Transformative Learning Theory evolved over time and in the year 2000, the salient elements acknowledged, relevant to this study, were that of the affective, emotional and social aspects of the theory (Mezirow, 2000).

Threshold Concepts and Transformation

As discipline experts, we understand that after our students acquired the knowledge we teach them at a university level, they will then encounter unpredictable circumstances in industry. We therefore can help students prepare for this volatile future by incorporating troublesome knowledge into their disciplines with the use of innovative teaching and learning techniques. Once both discipline experts and students understood this need for being open to change, the journey to go through this much-needed process of transformation becomes a more pleasant one (Westergaard & Wiewiura, 2015).

The suggestion by Threshold Concepts Theory researchers was the utilisation of other areas of research in order to strengthen this pedagogy (Meyer et al., 2010). An area like Transformative Learning was one of the recommended disciplines.

The two characteristics of a threshold concept that are perceived as all-important, are that of 'integration' and 'transformation' (Meyer et al., 2010). Concepts that assisted students to view the discipline in a different way from the onset may act as a transformative threshold for some students (Meyer, 2008), but not as a threshold concept as a whole, as this change in perspective was not integrative. An indication that a concept is a threshold concept, is when a student demonstrated that they can transform their initial use of the concept because they are now integrating these concepts into their thought process (Meyer & Land, 2006), i.e. thinking like an accountant.

The purpose of the characteristic 'transformation' was to provide the student with an ontological repositioning (Meyer & Land, 2006) of the discipline and an understanding that enabled the student to progress in the discipline (Meyer & Land, 2006). This transformation may occur immediately or over a period of time. In an attempt to make the teaching of threshold concepts smoother, a discipline expert may simplify the initial communication of these concepts, which may result in it being received in a rote form and therefore act as a barrier to the student acquiring the concept in a transformative manner (Meyer & Land, 2006). This will leave the student in a "suspended state" of understanding (Meyer & Land, 2003, p. 10), or liminality, and as such the student will be unable to move to the next level of understanding.

Because a transformative perspective was required for each threshold concept, a corresponding transformative perspective of a discipline's curriculum was also required. The threshold concepts of a discipline can be perceived as "jewels in the curriculum" (Meyer et al., 2010, p. 61), and these jewels needed to be showcased in an appropriate manner conducive to the teaching and learning of the discipline. Discipline experts could reassess the order of topics, being cognisant of the position of the integrating threshold concepts, as well as to ensure that each threshold concept is highlighted. Assessments should be designed in a way that allowed students to apply the discipline content learned, therefore making it "assessments for learning" as opposed to "assessments of learning" (Karunaratne et al., 2016, p. 504).

Three Categories of Transformative Learning

Transformative learning was described as a "web of threshold concepts" organised into three categories (Davies & Mangan, 2007, p. 722). The interdependence of these three categories resulted in a student progressing to full mastery once all were acquired. Category one, personal conceptual change, was a transformation of the layman's understanding from personal experiences, that was integrated by specialist jargon incorporated from a discipline-based way of thinking. This category of transformation involved students understanding how the definitions of the discipline jargon elucidated the everyday thinking regarding the discipline. This understanding provided students with a basic overview of the discipline discourse and allowed students to have a transformed view of the everydayness of Accounting 101, without the integrative characteristic, referred to above.

Category two, discipline-based conceptual change, was a transformation of the prior disciplinary objectives a student has obtained, that is integrated and modified by the theoretical perspective of the discipline. This category of transformation involved those concepts that do possess the integrative characteristic, by linking some of the basic concepts and exposing the interrelationships between them.

Category three, procedural conceptual change, was a transformation using the procedures or ways of practicing of a discipline in order to create discipline-specific arguments and conclusions (Davies & Mangan, 2007). This category of transformation involved students applying all discipline content acquired by interpreting graphs, understanding how models function, displaying the ability to use statistical and linguistic instruments to evolve their academic reasoning skills (Meyer, 2008).

3.4 Troublesome Affect

3.4.1 Troublesomeness

"Oh dear, whatever will I do?"

(Carroll, 1951, 9:34)

Troublesome is one of the characteristics of the Threshold Concepts Theory. Students generally entered the classroom with a preconception of some of the discipline content. These preconceptions are generally misconceived and are mostly comprised of the troublesome

discipline content (Meyer et al., 2010). The purpose of the Threshold Concepts Theory was to expose students to this troublesome discipline content and to teach them how to approach problems that arise in order for them to undergo a transformation (Westergaard & Wiewiura, 2015). The acquisition of the threshold concepts of a discipline was troublesome by nature as this involved a transformed sense of one's self (Meyer & Land, 2006) when navigating through the liminal space. Troublesome discipline content can be classified into five different forms, which will be elaborated on in this literature review theme.

The poem by Giacomo Leopardi described a large hedge situated around the perimeter of his house that concealed a mountain range beyond the hedge boundary or threshold of his house or safe space. Leopardi went on to further describe that even though this never-ending, unbounded space filled him with fear, he was at the same time drawn to the unknown. The metaphor in this poem appropriately described the acquisition of this troublesome knowledge from a Threshold Concepts Theory perspective as one swayed between a position of safety to a position of the risky unknown (Meyer et al., 2010). This journey within the liminal space will take time for a student to navigate through as it may involve swaying between the old safe space and the new risky space with the emotions of apprehension, difficulty, patience, etc. (Meyer et al., 2010). As the purpose of the Threshold Concepts Theory was to locate troublesome discipline content in these transitional spaces, en route to crossing the conceptual thresholds of the discipline, discipline experts will then be in a better position to identify ways to redesign their curriculum so that students can navigate through these transitional spaces successfully (Land et al., 2005).

Some examples of how discipline experts have attempted to redesign their curriculum for successful student transitions are by conducting student evaluations in order to gauge from the perspective of the student, what discipline content they believed to be troublesome (Meyer, 2008), so as to bridge the gap between the perspective of the discipline expert and students. Other discipline experts have researched how a "teaching-focus" over a two-year period (Harlow et al., 2014, p. 62) of the same threshold concepts may help students to grasp troublesome discipline knowledge with the emphasis of repetition over time being the motivation selected. Discipline experts have also utilised the Threshold Concepts Theory to formulate a "concept inventory" that evaluated the students' understanding of troublesome discipline content so as to determine the ability of the students (Scott et al., 2014, p. 1). Other discipline experts have utilised a different perspective, by asking their tutors to identify

troublesome discipline content and to thereafter collaborate with the students (Orsini-Jones, 2014) and impart their experiences with the same troublesome discipline content when they were students in the prior year studying the same discipline. This method of utilising a different perspective had the effect of having students exposed to a more current perspective of what prior students who have mastered the discipline have experienced, instead of the experiences of the discipline experts.

3.4.2 Perkins' Types of Troublesome Knowledge and Ways of Knowing

Perkins' Types of Troublesome Knowledge

"Goodness. I wonder if I'll ever get the knack of it..."

(Carroll, 1951, 38:22)

The threshold concept characteristic most relevant to this study is 'troublesome knowledge'. David Perkins defined five types of troublesome knowledge. The first type of troublesome knowledge was ritual knowledge. It had a "routine and rather meaningless character" (Meyer & Land, 2006, p. 37). The second type was that of inert knowledge, knowledge that was stored in our minds, but used actively. This type of knowledge involved the learning of techniques, but failing to apply them to everydayness because one of the other Threshold Concepts Theory characteristics, that of 'integration', was also troublesome because not only did a student need to acquire the parts, but they then had to view all these parts in a different way (Meyer & Land, 2006). The third type was conceptually difficult knowledge, knowledge that was encountered in all disciplines, but often misunderstood resulting in intuitive beliefs taking precedence. The fourth type was foreign or alien knowledge, knowledge presented in a different perspective to our view. The final type of troublesome knowledge was tacit knowledge, knowledge that caused our presumptions to be way off from the actual target as we amalgamated the different types of discipline knowledge.

These categorisations made by Perkins resulted in an organising framework that can be utilised to identify how a student articulated their perspective of troublesome knowledge within a discipline. Because these categorisations can be seen as a framework for locating troublesome knowledge, it was in turn used to monitor the progression of the understanding a student had regarding each troublesome threshold concept throughout the learning journey (Meyer & Land, 2006).

A further type of troublesome knowledge that could be included in the troublesome knowledge framework was that of "loaded knowledge". There was an assumption that loaded knowledge referred to discipline content that has "embedded world views", as is the case with all discipline content. Loaded knowledge referred solely to circumstances that required "unquestioned acceptance of a contingent perspective", which was a condition of the discipline's success. However, what one discipline expert perceived as loaded knowledge could differ from that of another discipline expert's perspective (Meyer et al., 2010, p. 47).

Ways of Knowing

"A threshold concept can be considered as akin to a portal, opening up a new and previously inaccessible way of thinking about something. It represents a transformed way of understanding, or interpreting, or viewing something without which the learner cannot progress." (Meyer & Land, 2006, p. 3). This definition of a threshold concept coined by Meyer and Land, implied that the journey to understanding discipline content was troublesome and that the transformed understanding that students possessed thereafter was an indicator of how students thought. This transformed understanding implied that the student had a privileged understanding, and this further implied that this understanding was debatable. As such, this understanding resulted in how the identification and prioritisation of threshold concepts came to be (Meyer & Land, 2006).

The Threshold Concepts Theory acknowledged the ways of knowing a subject that Perkins referred to, with emphasis being placed on the distinction between the students' initial perception of the everydayness of discipline concepts and that of the discipline expert's perception of discipline concepts (Gronow & Morrison, 2017). Perkins made reference to "ways of knowing" in his work, and the phrase "ways of understanding" from the Threshold Concepts Theory definition was used in a similar way (Westergaard & Wiewiura, 2015). This study will be using the phrase "ways of knowing".

In circumstances it may be appropriate to account for threshold conceptions, or epistemes as per Perkins' work, instead of threshold concepts. A conception is a world view of a discipline that comprised of a framework that provided the rationale behind the techniques of the discipline (Meyer & Land, 2006). A discipline encompassed more than just sets of concepts. It had an episteme that was unique to their discipline. An episteme is a "system of ideas or way of understanding that allowed us to establish knowledge" (Meyer & Land, 2006, p. 42; Meyer

et al., 2010, p. 342). Perkins elaborated on episteme to be the same as "ways of knowing" and termed it to mean the "manner of justifying, explaining, solving problems, conducting enquiries and designing & validating various kinds of products or outcomes" (Meyer, 2008, p. 262). This implied that there was something more than just a set of concepts that a student needed to acquire in order to master the discipline, the episteme of the discipline. Constructivist discipline experts created solutions not only for troublesome discipline content, but also for troublesome discipline epistemes, that of problem-focused teaching and learning with much deliberation thereafter that analysed the effects of the problem-focused method implemented (Meyer & Land, 2006).

'Integration', one of the other characteristics of the Threshold Concepts Theory, was also seen to be troublesome. The reason that this characteristic was troublesome is that once you acquired the concepts or parts, in the form of knowledge and understanding, you needed to process these concepts or parts in a different way (Meyer & Land, 2006), as some of them were subject to being viewed in terms of an integrated or interrelated system. This in essence meant that there was a rearrangement of the ways of knowing to create order in a discipline (Meyer et al., 2010). The Threshold Concepts Theory not only provided a way of knowing with order, but also allowed discipline experts to produce new methods that supported effective teaching environments (Davies & Mangan, 2008). These effective teaching environments were created in such a way so as to aid students to manage with the threshold concepts identified in the discipline. These environments were also expanded on to allow students to conduct their own research (Meyer & Land, 2006) about the discipline with the discipline expert as the facilitator. However, students may be able to only grasp the concepts, and not be able to move beyond this level of understanding to a deeper one (Meyer & Land, 2006), because they failed to understand what the threshold conceptions or epistemes of a discipline actually were (Karunaratne et al., 2016).

3.4.3 Troublesome Affect

"And now my dear, something seems to be troubling you. Won't you tell us all about it. Start at the beginning and when you come to the end, stop..."

(Carroll, 1951, 45:48)

The cognitive journey attributed to students at a university level has been described very broadly with specific bodies of thought emerging as of late. One of the bodies of thought identified as relevant to this research was that of "interest in and emotional commitment to pursuit of particular kinds of knowledge" (Meyer et al., 2010, p. 193). This implied that the Threshold Concepts Theory may overlap with other disciplines of a cognitive and affective nature in order to achieve mastery within a discipline (Cousin, 2008). The threshold concepts of a discipline could be also be perceived as "articles of faith", that are to be believed by the students more than understood, categorising them as predominately affective in nature (Atherton et al., 2008, p. 11). The grasping of a threshold concept can be described as an emotionally-filled occurrence, with the effect of transforming a student's internal perception of themselves, the discipline that they have selected as well as their worldview. Asking students to document their perception of the threshold concepts learning journey with their transformative experiences was problematic as students tended to struggle to remember emotionally-filled experiences accurately (Land et al., 2016). This examination of a student's experiences in the liminal phase will take into account both the cognitive concerns as well as the affective, or emotional, concerns that they encountered within the liminal phase (Land et al., 2016).

Throughout the study of the Threshold Concepts Theory, reference to the emotional journey has been made. The five types of troublesome knowledge would more than likely evoke the feelings that came with any sort of trouble. Students described their encounter with the Perkins' five types of troublesome knowledge with the use of emotional language, a language that did not fit into any of the five types of troublesome knowledge described. Words like "stressful", "debilitating", "frustrating and intensely emotional", "shocked", "upset", "hopeless", and "very anxious" are words that did not resonate with Perkins' categorisation. Even though discipline content was neutral from an emotional perspective, the experiences students had when interacting with discipline content was highly emotional. As such, it made sense that the emotional response to the five types troublesome knowledge has been formally identified as another type of troublesome knowledge, that of 'troublesome affect'. There was an emphasis

placed on the student learning and the emotion attached to the student learning as discipline experts have identified this emotional element as a bottleneck in a student's learning journey (Land et al., 2016, p. 5).

Emotional capital, being a set of assets, usually experience or age, used to process emotional capital (Meyer & Land, 2006), was imperative for a student to encounter a reduced degree of discomfort from troublesome discipline content. The Psychological Capital (PsyCap) factors may be used to explain why some students can successfully navigate through the liminal journey and why some students, who, in spite of having the intellectual capabilities to do so, cannot (Land et al., 2016). This was elaborated on in the next literature review theme. The types of affective learner positions can be used as a heuristic instrument to assist discipline experts to determine the position of each of their students in the liminal journey, as well as to query the emotional capital possessed to master the threshold concepts of the discipline (Meyer & Land, 2006). The first type of affective learner referred to the Spectator. This type of student merely gazed over concepts from afar with a superficial understanding of them. The second type referred to the Defended Learner. This type of student resisted the study of the concepts as they felt they were not exposed to a safe environment conducive to learning. The third type referred to the Victim-Identified Learner. This type of student was willing to experience a transformation with the focus being on conversion as opposed to engaging analytically with the discipline content. The fourth type referred to Self-Reflexive Learners. This type of student was perceived as the ideal student as they aspired to reach a transformed understanding of themselves by mastering the concepts of the discipline (Meyer & Land, 2006).

The acquisition of threshold concepts was troublesome, both cognitively and affectively. The presence of heightened emotions, regarding the manner in which learning took place, minimised the amount of learning that actually occurred (Westergaard & Wiewiura, 2015). In order to entice students to become Self-Reflexive, discipline experts must communicate the value of navigating through the liminal space, being that it is academically rewarding (Land et al., 2016).

3.4.4 Troublesome Language

"Unbirthday? Why I'm sorry, but I don't quite understand..."

(Carroll, 1951, 43:37)

'Discursive', one of the other characteristics of the Threshold Concepts Theory, describes the language acquired (Land et al., 2016), in relation to the discourse of the specific discipline content. The 'discursive' characteristic may reveal a new perspective in the form of "action poetry", language that would bring the ideas regarding teaching and learning to fruition (Meyer & Land, 2006, p. 118). This new language, specific to the discipline, may be viewed as conceptually troublesome to students (Meyer & Land, 2006) as they may not be able to shift their perspective from their everyday understanding of concepts to the new discipline meaning of the concepts. However, as students familiarised themselves with these discipline concepts and eventually grasped the threshold concepts in conjunction with the extended use of the language specific to these concepts (Meyer & Land, 2005), they were then able to shift their perspective and reposition themselves relevant to the discipline content discourse (Land et al., 2005). Other students, however, did not go through the process mentioned and immediately utilised the concepts upon being introduced to them without the discipline-specific understanding that was required of them (Meyer et al., 2010).

Discipline experts have focused their attention on the language specific to the discipline (Foundation et al., 2013) as well as the threshold concepts of the discipline in order to assist students to gain full mastery of the discipline. Discipline experts have also taken the time to work iteratively with their students when "crossing grammar thresholds" by developing activities based on the grammatical barriers identified (Cousin, 2008). Other researchers have used text analysis when investigating the discourse of the students as well as the transformations of the student discourse that was a result of a transformed way of understanding threshold concepts (O'Mahony et al., 2014). Other discipline experts have instead focused intensely on the threshold concepts of a discipline and minimised the use of discipline-specific jargon (O'Mahony et al., 2014) and made the theoretical link of the discipline to the practical real-world, in order to improve student learning of a discipline. A cohort of students concurred with this discipline expert's method to utilise minimal disciplinary jargon, as they felt that the concepts of the discipline was not troublesome, but that the troublesomeness was instead found to be the language used by discipline experts to teach the concepts (Meyer & Land, 2006).

3.5 Liminality and Progression to Mastery: The Affective Journey

"Where do you come from and where are you going?"

(Carroll, 1951, 1:02:26)

Subsequent to the views of Davies and Mangan in 2007, was that of Entwistle in 2008, who expanded on their work and spoke of "transformative thresholds in learning" (Meyer, 2008, p. 22) using two concepts (Entwistle, 2008). Two concepts, that of knowledge and of learning, have the corresponding effect of mapping a student's progression to full mastery. They both described the significant changes in a student's ideas and the understanding of these ideas (Entwistle, 2008; Perry, 1970; Perry, 1988; Saljo, 1979; Saljo, 1982). Non-major accounting students entered the pre-liminal phase with negative preconceptions and personal experiences of the discipline. Once they commenced with the learning journey, they needed to traverse through three stages, the pre-liminal, liminal and post-liminal stages of learning, in order to progress to full mastery. Threshold concepts have the effect of being troublesome to students from an affective as well as a cognitive point of view. The creating of a safe space for students in the liminal phase and informing them of the outcome of entering the liminal phase is important for them to understand as they will then be more willing to take the next step and cross the threshold (Land et al., 2016).

3.5.1 Liminality

"Oh, my what a peculiar place to have a party…" (Carroll, 1951, 5:44)

The Threshold Concepts Theory used the term 'liminality' to describe the place in which a student learned how to master a threshold concept (Meyer & Land, 2006). Victor Turner has defined the liminal space as the bewildering "betwixt and between" space (Meyer et al., 2010, p. 282). Turner built upon van Gennep's three phase model of "rites of passage" or "transition" where the process of learning is described as separation, margin and aggregation (Turner, 1969, p. 359). The first phase, separation, can be likened to that of pre-liminality, a space in which students are removed from a prior fixed position in a social or cultural structure. They are preparing themselves to enter the second phase, margin, which can be likened to that of liminality. Within this liminal space, students experienced the discipline content to be bewildering as they possessed minimal attributes found here. The third phase, aggregation, can be likened to that of post-liminality, a space in which the student has successfully navigated through the liminal journey and mastered the concepts of the discipline (Turner, 1960).

From the explanation above, liminality, the Latin word for "in the threshold" referred to the oscillation between the safety the student felt in the familiar space, and the discomfort the student felt in the unfamiliar new space. Students who found themselves stuck in the pre-liminal space were not as susceptible to oscillate in the next phase, that of the liminal space. This implied that not every student in the liminal space will cross over the threshold and will therefore be in a stuck position (Meyer et al., 2010, p. 282), with a limited understanding of the discipline that resulted in two forms of mimicry: compensatory mimicry, where a student rehearsed only what discipline content they knew instead of what was required; and conscious mimicry, where a student acknowledged that they cannot acquire what was required (Meyer & Land, 2006).

The acquisition of a threshold concept was a movement through the liminal phase that resulted in a transformed perception of the student's understanding. The reason many found themselves stuck in the liminal phase was that the acquisition of a threshold concept had a strong transformative effect that may be troublesome for students to grasp (Meyer & Land, 2003, 2006), as they are unsure of how to process, integrate and apply these discipline concepts (Hedges, 2014).

Learner Safety

"'Who in the world am I?' Ah, that's the great puzzle!" (Carroll & Tenniel, 1969, p. 155)

"It's no use going back to yesterday, because I was a different person then." (Carroll & Tenniel, 1969, p. 19)

Threshold Concepts theorists perceived that mastery of a discipline was achieved by making students aware at the onset that discomfort and unsafety were inevitable prerequisites to the mastering of the learning journey. This body of literature focused on creating a safe space or supportive 'holding environment' for students to navigate through at the point of them encountering troublesome knowledge or when they became stuck, i.e. during the liminal phase of learning. This differed greatly from theorists like Maslow or Rogers and Freiberg, who encouraged discipline experts to create a safe space at the onset of learning as a whole. Identity was also a prominent Threshold Concepts Theory feature. Where a student felt discomfort or unable to master a discipline concept, this implied that a student was unable to identify themselves against a successful position with regards to learning. The ideal affective learner

positions may be used as a heuristic instrument to assist discipline experts to determine the position of their students in the liminal journey (Meyer & Land, 2006). Learning in itself, was a type of identity work that allowed us to draw our attention to the affective aspect of learning in a Threshold Concepts Theory environment (Cousin, 2008).

The hope of researchers was to create supportive and safe liminal spaces in which discipline experts could formulate ways to assist students to overcome both the epistemological as well as the emotional barriers to learning (Meyer & Land, 2006). What follows are examples of research efforts of an epistemological nature.

A discipline expert formulated an instrument called the "Dear Colleen letter" for communication with her students. This instrument encouraged students to initially communicate with the discipline expert using informal discourse to describe unfamiliar discipline content. Once the student was more comfortable with the discipline content, the discipline expert facilitated the translation of the student's discourse to a more formal one that would allow the student to navigate successfully within the discipline (O'Mahony et al., 2014).

Discipline experts have adopted a "listening for understanding" approach to their teaching in order to better understand their students (Meyer & Land, 2006, p. 199). This meant that the discipline expert needed to foster a teaching environment with a third ear used to listen for the terminology that fashioned what the student does know, does not know, does forget and where he/she gets stuck. This approach to teaching prevented discipline experts from judging their students' learning capabilities and instead created feelings of empathy for the difficulty that students encountered conceptually and emotionally during their learning journey (Meyer & Land, 2006).

Discipline experts were put in the position where they had to recontextualise their perceptions (Meyer et al., 2010) upon the realisation that their students had misconceptions regarding the discipline content.

Other discipline experts have researched how a "teaching-focus" over a two-year period of the same threshold concepts (Harlow et al., 2014, p. 1) may help students grasp troublesome discipline knowledge with the emphasis of repetition over time being the motivation selected.

Discipline experts have evaluated student responses to discipline-specific assessments, which allowed the discipline experts to classify exactly where a student was in the liminal journey. This research found that approximately half of the students were at the pre-liminal phase, with only a few at the threshold (Lloyd & Frith, 2013).

Discipline experts have provided their students with a learning space to reflect upon and evaluate their specific learning position over their learning journey. This learning space had the effect of also allowing the student to recognise the recurrent nature of learning, their learner position, their learner identity, etc. (Meyer, 2008). This recognition resonated with identity aspect of the Threshold Concepts Theory.

Some students experienced emotional or affective barriers to learning because of the anxiety they felt about the discipline content. This anxiety resulted in the student either not engaging or not engaging constructively with the discipline resources. The constructive engagement with discipline resources, be it in the traditional form or online form, was necessary for mastery of the discipline, without which a student may fail or deregister from the discipline. The issue was then how discipline experts can formulate ways to assist students to overcome their anxiety, being an affective barrier to learning, and their unwillingness to engage constructively in the discipline (Meyer et al., 2010). What follows are examples of research efforts of an emotional nature.

Discipline experts have acknowledged that the negative perceptions and negative comments that students made regarding the discipline content are firm viewpoints that needed to be challenged by discipline experts if they are to assist students to enter the liminal phase of learning. If these viewpoints are not addressed by the discipline experts, the students may remain stuck in the pre-liminal phase without any hope of entering the liminal phase as they have removed themselves from learning (Meyer et al., 2010).

Discipline experts realised that they also needed to identify which students are scared and possessed an emotional barrier to learning. This “perceptual threshold” can be overcome as discipline experts allowed students to engage in an exercise of reflection of their learning journey upon completion of the discipline (McGuigan & Weil, 2010, p. 2).

Progression to Mastery

"There he is. I simply must get through..."

(Carroll, 1951, 8:13)

The threshold concepts of a discipline are regarded as the jewels of the curriculum. The rarity of these jewels implied that Threshold Concepts theorists did not want to overload the curriculum, but to rather focus on simplicity and the mastery of these threshold concepts of the discipline (Meyer & Land, 2006). The mastery of discipline concepts commenced with the recognition of the liminal phases in the learning journey (Cronin, 2012). When learning in a Threshold Concepts Theory environment, students are warned about the troublesome knowledge that they will encounter in the liminal phase of their learning from the beginning of their learning journey. The liminal phase has been shown to be a long and uncomfortable journey that required a student's thinking to be transformed from that of a definitive way of thinking to an abstracted one (Harlow et al., 2014).

Students were also reassured about the safe space or holding environment that they will be supported in by discipline experts during this troublesome liminal phase. This holding environment was conducive to allowing students to slowly develop their understanding (Cousin, 2008), as all the personal, discipline and procedural threshold concepts must be grasped in order to master the threshold concepts of a discipline (Meyer, 2008). Even though students may experience the threshold concepts of a discipline as conceptually difficult, they were willing to continue with the journey if it was made explicit that the troublesome knowledge they initially encountered would become less troublesome over time. Knowing this explicit information allowed students to continue in the learning journey with more confidence as they knew that they would gradually come to understand the threshold concepts (Meyer & Land, 2006). If discipline experts created a safe and supportive enough liminal holding environment, then the discipline content should be understood by all students and they should feel confident enough to shift in perspective (Fortune et al., 2012) or acquire the transformed ways of understanding as per the Threshold Concepts Theory definition. In order to cross a threshold permanently, the students needed to not only feel confident when mastering the threshold concepts of a discipline, but they also needed to feel comfortable with the new knowledge acquired. Students also needed to possess the feeling of belonging to the other side of the threshold in order to permanently remain there (Land et al., 2016).

Rewards

"Oh dear. I do wish I hadn't cried so much..."

(Carroll, 1951, 10:44)

In order to entice students to voluntarily enter the liminal phase of learning, discipline experts needed to communicate the advantages thereof, being academic fulfilment (Land et al., 2016). Students can progress developmentally (Land et al., 2016) if they mastered the troublesome threshold concepts of the discipline (O'Donnell, 2010). Upon the completion of mastering the threshold concepts of a discipline, students were then confident enough to use the liminal space with their discipline experts in a creative manner in order to research and produce answers, and value the uncertainty of the knowledge produced (O'Mahony et al., 2014), as they knew that this creativity would prepare them to engage in a positive manner when confronted with uncertain future circumstances (Allen, 2014).

If, however, students appeared to be stuck in the liminal space, with their level of understanding being at the stage of mimicry, they will not progress beyond the threshold and therefore not be able to "think in the subject" (Meyer, 2008, p. 183). Other students may encounter a negative propensity to their threshold concepts experiences within the relevant discipline and may develop a dislike to even the simplest of things relating to the discipline content (Easdown & Wood, 2012).

3.5.2 The Affective Journey: Emotion and Motivation

"Why, sometimes I've believed as many as six impossible things before breakfast..."

(Carroll, 2022, p. 41)

The third concept of the theory by Timmermans and Meyer in 2016 related to emotion and motivation. The negative preconceptions experienced in the pre-liminal phase of learning were the commencement of the emotions felt by Accounting 101 students prior to entering the classroom. Students then encountered troublesome knowledge in the liminal phase of learning. Troublesome was one of the characteristics of a threshold concept and with these five forms of troublesome knowledge came the troublesome affect, the emotional side, experienced as a result of it.

Deep Learning

"Oh goodness! What if I should fall right through the centre and come out the other side where people walk upside down? But that's silly..."

(Carroll, 1951, 7:12)

Effective learning, like the first concept of the theory by Timmermans and Meyer in 2016, can be equated to the intentional choice of a student to learn, making it that of deep learning. The improvement of learning, be it of a superficial or deep nature, was determined by student motivation. Motivation resulted in students having the self-esteem to learn independently, in a student-driven learning environment. The knowledge acquired by these motivated students was deeply used by the application thereof. This style of learning followed that of constructivism as students created upon the knowledge received (Biggs, 1999). This constructivist learning environment was similar to that of Threshold Concepts Theory learning as the pedagogy had the prospect of promoting deep learning (Shanahan et al., 2016).

The Threshold Concepts Theory does not entail discipline experts learning a new discipline, but instead required discipline experts to learn how to use the Threshold Concepts Theory techniques to deeply evaluate their current discipline (Cousin, 2010). This involved an analysis of exactly what is taught, why it is taught and how it is taught (Khan, 2014). This analysis prompted a redesigning of the curriculum that promoted deep learning (Burch et al., 2015). The learning outcomes of a discipline will be reclassified as per the Threshold Concepts Theory and this improved quality of the learning outcomes, or threshold concepts of the discipline, ensured deep learning (Meyer, 2008). Discipline experts can also deepen learning by developing appropriate assessment methods that are focused on examining the improved learning outcomes (Decker, 2006).

Once these adjustments are made, a corresponding deep understanding from students will also be expected from the commencement of the learning journey (Gronow & Morrison, 2017; Scott et al., 2014). A learning process rooted with deep enquiry allowed students to acquire rich knowledge during this journey (Meyer & Land, 2006). The progression to mastery involved the students grasping the basic discipline concepts and then an understanding of the procedural discipline concepts in order to acquire the threshold discipline concepts. The understanding of both the procedural and threshold discipline concepts resulted in a deeper understanding of the initial basic discipline concepts (Meyer et al., 2010). This advanced design of learning was that

of a deep approach to learning (Meyer, 2008). If, however, students appeared to be stuck in the liminal space, with their level understanding being limited to mimicry, they will be unable to progress beyond the threshold and therefore not be able to 'think in the subject' with the deep level of understanding required (Karunaratne et al., 2016).

Self-Efficacy Theory of Motivation

"It takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"

(Carroll, 2022, p. 17)

Motivation studies in academia have predominantly used the self-constructs of self-concept and self-efficacy. A student's motivation and achievement can be predicted or explained using these self-constructs, with the focus of the study being on that of self-efficacy. The construct of self-efficacy referred to the belief of a student in their capability to achieve. This implied that a student was confident enough to take charge of their motivation, behaviour and social surroundings as a result of their prior experiences of mastery (Bandura, 2010; Bandura & Walters, 1977). Students with positive perceptions of themselves are more likely to possess the motivation to succeed and therefore overcome epistemological blocks as opposed to students with negative perceptions of themselves who will never reach their full potential. The emphasis is placed on a student's 'perceived' self and how they will succeed over time, instead of one's 'actual' self. Discipline experts investigated the self-perception and self-efficacy of the creativity of a cohort of marketing students and a cohort of accounting students and found that the difference between the two cohorts was that the accounting cohort were not perceived as creative, but instead organised (Schlee et al., 2007).

This self-construct of 'self-efficacy', richly explained the emotional and cognitive journeys of students who possessed a positive view of themselves as they progressed to mastery through the phases of liminality (Bong & Clark, 1999; Bong & Skaalvik, 2003). One of the four factors of the construct of Psychological Capital (PsyCap) was that of 'efficacy', which looked at the emotional capital a student possessed in order to pass through the liminal phase of their study of Accounting 101. Emotional capital, being a set of assets, usually experience or age, used to process emotional capital (Meyer & Land, 2006), was imperative for a student to encounter a reduced degree of discomfort from troublesome discipline content.

Factors that contributed towards the self-construct of a student's self-efficacy, are enactive

mastery experience, vicarious experience, verbal persuasion and physiological reactions. The first factor was enactive mastery experience. This factor looked at a student's past experiences. Many successfully completed tasks strengthened the student's self-efficacy and many failures had the opposite effect. A strengthened sense of self-efficacy was believed to leave a student unaffected by interim failures. The second factor was vicarious experience. With this factor, people developed their self-efficacy based on the performance of others of the tasks undertaken. This modelling behaviour was effective if measures of adequacy were absent and students resonated with that of the model. The third factor was verbal persuasion. This factor was successful when communicated by knowledgeable people who utilised a persuasive means of presenting information with analytical feedback. The fourth factor was physiological reactions. This factor involved the acknowledgement of somatic responses like sweating, fatigue, changes in mood etc., that will affect a student's self-efficacy (Bong & Skaalvik, 2003).

Liminality is a cognitive and affective journey that was traversed more easily by some students. The degree of troublesomeness experienced by a student and the willingness of students to enter the liminal space varied. The connection between the cognitive and affective journey as well as the emotional welfare of students has been of interest to researchers in the recent years (Davidson et al., 2012). The psychological characteristics of students are considered as a measure to determine why some students are able to negotiate the liminal space, while other students fled and remained untransformed. The construct of Psychological Capital (PsyCap) looked at four factors that did not take intellect into account (Luthans, Avolio, et al., 2007), but rather the emotional capital that a student possessed in order to pass through the liminal phase: 'hope', 'efficacy', 'resilience' and 'optismism' (Land et al., 2016).

The first psychological capital factor was that of hope. This factor was affiliated with students' belief in their ability to adhere to a set of instructions in order to achieve their desired goals (Snyder et al., 2002). When confronted with academic adversity and problem solving, the students resolved these according to the amount of hope they possessed (Chang, 1998). The second psychological capital factor was that of 'efficacy'. This factor was affiliated with 'individualacy' and a student's belief that they were able to master the goals presented. Students with a high sense of self-efficacy were more inclined to persevere when approached with a challenging task until they achieved mastery, whereas students with a much lower sense of self-efficacy were more inclined to surrender when faced with difficulty (Pajares, 2005; Schunk, 1991; Zimmerman, 2002). The third psychological capital factor was that of

'resilience'. This factor was seen as a student's ability to transform a negative situation into that of a positive one (Luthans, 2002), with resiliency being an attribute of a student or cohort of students that resulted in a positive conclusion (Masten & Reed, 2002). Examples of these attributes could be faith, humour, emotional stability, a positive perception etc. (Masten, 2001). The fourth psychological capital factor was that of 'optimism'. This factor, in the learning journey, related to student independence and self-determination regarding the mastery of learning goals (Shogren et al., 2006). This desire to master learning goals may be attributed to an expectation of positive results and the participation in goal-designed tasks (Scheier & Carver, 1985).

As much as these four factors impacted the behaviour of students in their own right, their greatest impact occurred when all four factors are integrated, i.e. the whole, all four factors fused into one, has a greater impact than the sum of the individual four factors (Luthans, Youssef, et al., 2007). A research study found that engagement structured to strengthen the psychological capital of the cohort of students also yielded improved academic performance. Students were asked to complete an adapted PsyCap account prior to the submission of a written assessment in order to determine if there was a relationship between this PsyCap account and the academic abilities of the students (Luthans, Avolio, et al., 2007). Due to the dearth of research studies conducted using PsyCap in an academic environment, this study implemented the use of the Myers-Briggs Type Indicator as an extension of the existing PsyCap research.

Myers-Briggs Type Indicator

The Myers-Briggs Type Indicator was a test of one's personality based on Jung's psychological types (Pittenger, 1993a). This test has been perceived as an instrument that has allowed individuals to understand their behaviour as well as that of others in a group environment (Sample, 2017). This self-reporting test (Carlyn, 1977) not only assisted individuals to identify and appreciate their existing attributes, but also provided them with the means to develop themselves further (McCaulley & Martin, 1995). The Myers-Briggs Type Indicator described sixteen possible personality types based on four psychological processes: sensing, intuition, thinking and feeling, as well as two attitudes exhibited: extraversion and introversion (McCaulley & Martin, 1995).

Researchers have utilised the sixteen possible personality types regarding motivation, success, preference, learning styles etc. to assist them when designing new methods of learning (McCaulley & Martin, 1995). One's personality influenced the preference one has when selecting a learning style. If participants adapted well to a learning style, they will feel comfortable and satisfied (Harrington & Loffredo, 2010) when engaging in the learning environment. Despite the popularity of the Myers-Briggs Type Indicator, researchers have also identified limitations (Boyle, 1995) inherent with the use of the instrument and have further indicated that it should not be utilised for career planning, therefore making the Myers-Briggs Type Indicator popular for uses unrelated to its validity and reliability (Pittenger, 1993a). This study opted to use this instrument to assess the personality of each of the participants prior to the commencement of the threshold concepts tutorial programme and the implementation of the chosen methodology, that of Interactive Qualitative Analysis (IQA). The study also assessed the personality of each of the participants upon the completion of the programme in order to determine if there were any changes to their personality that would be attributed to how the participants learned Accounting 101 in a threshold concepts environment in a newly-designed online platform during the COVID-19 pandemic.

This progression to mastery, along the affective journey, resulted in a final movement to a hope-filled means of restabilisation and reintegration of a student's identity. The previous ways of ways of thinking have been replaced with a transformed perspective throughout the grief and troublesomeness experienced in the liminal phase of learning (Boyd & Myers, 1988).

3.6 Threshold Concept Theory Critique

Since the emergence of the Threshold Concepts Theory in 2003, there have been, as with any theory, criticisms and suggestions alongside the benefits outlined. The first critique was a definitional issue. Questions regarding the number of characteristics necessary for a concept to be seen as a threshold concept were raised. The clarity of the words preceding some of the threshold concepts, for example "likely", "probably" and "possibly", raised the issue of whether a subset or majority of characteristics are required (O'Donnell, 2010, p. 2). O'Donnell concurred with Rowbottom's earlier claim saying that Meyer and Land did not successfully explain what was core to a threshold concept nor did they explain what a concept specifically meant to them (Rowbottom, 2007). Further to this, Rowbottom also felt that it was not made

explicit that we needed to view a non-conceptual space as opposed to appearances that shielded us from the real-world, thus leaving us with the term ‘threshold abilities’ instead.

The characteristics were also felt to be poorly explained without supplementary explanations on how the characteristics addressed were chosen. These supplementary explanations gave deeper meaning to a threshold concept and as such different methodological standpoints could be used. Qualitative research drove how threshold concepts have been approached and no quantitative methods have been adopted as yet (Quinlan et al., 2013). Quinlan also questioned who a threshold concept was decided upon by when critiquing an article by Lucas (Land et al., 2016, p. 55).

Both Gestalt theorists and Threshold Concepts theorists resonated with the notion that the acquisition of the entire discipline content allowed students to view the component parts. Gestalt theorists felt that the Threshold Concepts Theory broke up the learning design by benefitting a few concepts above the others, therefore refuting the principle of the total being more than the sum of the component parts (Cousin, 2008).

3.7 Lacuna in the Scholarly Field

As non-major accounting students learning Accounting 101 possessed negative preconceptions of Accounting 101 in the pre-liminal stage and negative emotions as a result of the troublesome knowledge that they encountered in the liminal stage, the students chosen to investigate their way of thinking, made them the perfect fit for this study. The theory chosen incorporated the emotional or affective component of a student’s learning journey.

Prior accounting studies have been conducted on what the threshold concepts in accounting are, with little to no consensus being reached (Meyer & Land, 2006). The theory spoke about embedding integrated threshold concept knowledge. The Embedding Threshold Concepts (ETC) website had a set of economics questions that had threshold concepts embedded into them. An exhaustive search of contemporary databases revealed that a set of accounting questions that have embedded threshold concepts do not exist to date. As such I created a set of Accounting 101 tutorial questions and embedded them what I deemed to be the threshold concepts of the chosen discipline. This study investigated how non-major accounting students

learned Accounting 101 in a threshold concepts tutorial programme using the methodology of Interactive Qualitative Analysis (IQA). An investigation using this combination of students, this theory and this methodology, in an online platform, has not been conducted to date either.

3.8 Conclusion

This chapter described the literature review themes selected for the study in order to understand the learning journey of non-major accounting students. This journey will commence with the preconceptions they possessed of the discipline in the pre-liminal phase of learning. As the acquisition of threshold concepts are regarded as conceptually and emotionally troublesome in nature, the effective teaching method that will be utilised to overcome these barriers, in the liminal phase of learning, will be a tutorial programme, based on the Threshold Concepts Theory. The Myers-Briggs Type Indicator will be used to assess the personality traits of the participants prior to and upon completion of the threshold concepts tutorial programme.

CHAPTER FOUR
METHODOLOGY

4.1 Introduction

This chapter commences with an overview of the existing methodologies and methods used in the discipline of Accounting 101, followed by the existing methodologies and methods used in the discipline of Accounting 101 in conjunction with the Threshold Concepts Theory. Thereafter the methodologies and methods adopted by this study are described in three parts: the introduction, the threshold concepts tutorial programme and the Interactive Qualitative Analysis.

4.1.1 Methodology Overview

The research methodology that has been historically used in the discipline of accounting was that of a quantitative nature. This study used a relatively new qualitative methodology that emerged in 2004, namely, that of Interactive Qualitative Analysis (IQA). The framework utilised was a theoretical framework called the Threshold Concepts Theory. It has been applied to the discipline of accounting internationally using predominantly semi-structured interviews. The IQA methodology implemented the use of not only semi-structured interviews, but a focus group session. Other forms of data were used as a form of triangulation to confirm the findings of the study. The lacuna that this study aspired to fill will be using non-major accounting students with Interactive Qualitative Analysis (IQA) and the Threshold Concepts Theory that emerged in 2003.

Qualitative Research

This reason this study used qualitative research was that previous Accounting 101 studies have predominantly used quantitative research methodologies. Prior studies using the theory implemented in this study, the Threshold Concepts Theory, in conjunction with the discipline of Accounting 101, have used qualitative research in the form of semi-structured interviews. The qualitative methodology this study used is called Interactive Qualitative Analysis (IQA) and consisted of a two-phased methodology, focus groups and the use of semi-structured

interviews, to validate the results of the focus group phase. This qualitative study was informed by the principles of social constructivism, since the construction of knowledge and skills was that of a social process (Lucas, 2000). The purpose of qualitative research was to gain a deep understanding of human behaviour in its natural environment and the reasons for this behaviour. Qualitative research involved studying this human behaviour from the individual's perspective and the meaning these individuals, or group of individuals attributed to the human problem being investigated (Creswell & Creswell, 2017). Individuals from the group collaborated with each other and therefore learned from their peers within the group.

Paradigms

The learning paradigm or worldview that the Threshold Concepts Theory is located in is social constructivism (Meyer, 2008). The constructivist paradigm postulated that truth is deemed to be relative as it depended on one's own subjective perspective, allowing meaning to be created (Baxter & Jack, 2008). This study drew upon the principle of interpretivism as the approach to research, in an attempt to deeply understand the phenomenon.

Site

The study was carried out at a University in KwaZulu-Natal, South Africa. It was based in the School of Accounting, Economics and Finance and the participants of the study were the non-major accounting students learning Accounting 101. This was a semester-long course that took place in the first semester of a student's first year of study during the COVID-19 pandemic, during the seven-week period prior to the commencement of the students' online learning programme. This was an appropriate platform to use the Threshold Concepts Theory to understand how students learned in conjunction to being exposed to the discipline of accounting for the first time, which is the case for the majority of the class.

Case Study Research

This study elected to use case study as the research approach to conducting the investigation. Case studies produced an understanding of the phenomenon being investigated with a rich description (Rule & John, 2011). The understanding that is generated by means of a case study was fitting for the interpretivist paradigm that this study lay in, as it provided an understanding of one specific real-life instance over a specific period of time in order to convey the reality of the phenomenon being investigated (Navarro Sada & Maldonado, 2007; Rule & John, 2011). The research methodology, Interactive Qualitative Analysis (IQA), was guided by the purpose

of a case study, to gain an understanding of the phenomenon (Rule & John, 2011), and it required students to provide written feedback in order to deepen this understanding.

Sampling

Northcutt and McCoy suggested that a focus group should ideally consist of twelve to twenty participants (Northcutt & McCoy, 2004). This study therefore aimed to select twenty students from the Accounting 101 class. Amongst other attributes, these students should possess rich information regarding the objective of the study. These students should therefore shed light or different lights on the case study (Rule & John, 2011). This was an intended sampling choice, of purposive sampling.

4.1.2 Accounting Methods Without the Threshold Concepts Theory

Researchers have utilised a variety of methodologies and methods when conducting research in the discipline of Accounting 101.

Researchers wanting to gauge the perceptions of the discipline of accounting as well as the accounting profession, administered surveys by questionnaire of small cohorts, or focus groups, of accounting as well as non-accounting students (Azevedo & Sugahara, 2012; Fisher & Murphy, 2006). The type of survey used was exploratory in nature and was deemed to be of a good quality (Pinsonneault & Kraemer, 1993).

The facilitator used familiar military history stories as a method to introduce unfamiliar accounting concepts to non-accounting students pursuing a military career. Thereafter, the students took charge of their learning by creating their own meaning of these accounting concepts from the pre-existing meanings of military history (Miley, 2005).

A double-blind external peer review was used to assess the adherence of students to learning outcomes (Freeman & Hancock, 2011).

The case study method was used to demonstrate the significance of accounting methods relevant to the engineering function (Pointer & Ljungdahl, 1973).

4.1.3 Accounting Methods with the Threshold Concepts Theory

Researchers have utilised a variety of methodologies and methods when conducting research in the discipline of Accounting 101 with the Threshold Concepts Theory.

The Threshold Concepts Theory was one version of transactional curriculum inquiry (Cousin, 2007, 2008; Westergaard & Wiewiura, 2015). Discipline experts needed to not learn another discipline when using the Threshold Concepts Theory, but to rather research their discipline deeply (Barradell, 2013; Cousin, 2010) in order to develop the best ways to effectively teach it.

Students provided written and oral accounts of discipline-specific assessments that allowed the researchers to direct their attention to the students' understanding of accounting based on assessments attempted as part of a phenomenographic study (Meyer & Land, 2006).

The method of autoethnography, with the processes of self-reflection and writing, was used to explain the apprehension with an external view of the discipline of accounting and the internal view when personally teaching accounting, in order to counter these challenges (Lucas, 2011).

Researchers wanting to conduct a threshold concept analysis of troublesome accounting specific content, asked students to classify this discipline content as either a threshold concept or a threshold conception using the method of thinking out loud during interview sessions, so as to grasp their initial thoughts on the questions asked (Meyer et al., 2010).

Discipline experts in the field of accounting were asked to identify what they thought the threshold concepts of the discipline were by means of semi-structured interviews. The next step in this research was to corroborate the data collected by asking the students the same questions the discipline experts were subjected to in their semi-structured interviews (Magdziarz, 2016).

The researcher investigated how students interacted with the accounting discipline content and the troublesomeness that they encountered during their learning journey using the methods of online questionnaires and interviews (Myers, 2016).

In order for the researchers to analyse the perceptions of the students' development of skills, of time management, modelling and learning to learn, they used a series of focus group sessions over the duration of the programme (Stoner & Milner, 2010).

Phenomenography was used to analyse the experiences students encountered in this discipline. A further methodological step was that of a comprehensive review of the reflective work of the students, using their learning journal entries and their reflective essays (McGuigan & Weil, 2010) captured over the duration of the study.

In order to ensure that students engaged more actively with the discipline-specific material and to facilitate the development of transferable skills, an analysis of the reflective learning journal entries and reflective essays (McGuigan & Kern, 2010) was conducted.

Phenomenology was used to analyse the experiences students encountered in this discipline by means of open-ended inquiry, using semi-structured interviews with prompts (Gronow & Morrison, 2017).

An assortment of questions asked using a handheld personal response system, being that of a clicker (O'Keeffe, 2012), was used to determine the level of understanding a student possessed as well as the application thereof.

4.2 Methodology Part 1: Introduction

Finding my Participants

The methodology used, Interactive Qualitative Analysis (IQA), recommended between twelve and twenty participants for the focus group (Northcutt & McCoy, 2004). This focus group of students, in the purposive sample, should possess rich information regarding the objective of the study and should therefore be able to shed light on the case study (Rule & John, 2011).

Introductory Semi-Structured Interviews

Upon meeting the focus group participants, they were asked to complete two semi-structured interview schedules that detailed information relevant to them. The first semi-structured interview schedule was a 'Getting to Know You' document and the second was a Myers-Briggs Type Indicator document, that determined the behaviour of the participants (Pittenger, 1993b) and what motivated them as well as what troubled them. This Myers-Briggs Type Indicator semi-structured interview was also conducted with the participants upon the completion of the study.

4.3 Methodology Part 2: Threshold Concepts and the Threshold Concepts Tutorial Programme for Accounting 101

4.3.1 Threshold Concepts for Accounting 101

The emergence of a threshold concept commenced with a debate regarding which learning outcomes constituted "seeing things in a new way" and which learning outcomes do not (Meyer & Land, 2003, p. 1). The learning outcomes that did not allow us to see things in a new way, are called non-transformative concepts or associative concepts, relevant to threshold concepts, that will therefore remain as the learning outcomes of the discipline (Land et al., 2016). What is particular to a discipline, are the threshold concepts that they possessed (O'Mahony et al., 2014), as a "threshold concept can be considered as akin to a portal, opening up a new and previously inaccessible way of thinking about something. It represented a transformed way of understanding, interpreting, or viewing something without which the learner cannot progress" (Meyer & Land, 2006, p. 3). As it is the view that a student cannot progress to mastery without these threshold concepts (Land et al., 2005), discipline experts have undertaken to theorise which learning outcomes were imperative for a student to grasp in order to master the discipline (Brunetti et al., 2014).

Even though the idea of threshold concepts resonated with discipline experts because of terms like 'key concepts', 'core concepts', 'think like an accountant', there were also challenges regarding what constituted a threshold concept (Meyer & Land, 2006) when attempting to theorise discipline-specific threshold concepts. There has been a suggestion to use 'core concepts' to denote the building blocks of a discipline and 'key concepts' to denote the entering of a portal or gateway of understanding (Meyer, 2008). However, these 'key concepts' are not

automatically classified as threshold concepts, implying that threshold concept identification was not as easy as one would expect (Meyer, 2008). Discipline experts asked to identify what they felt may comprise a threshold concept, indicated that the procedure was difficult, or even impossible (Wuetherick & Loeffler, 2013), and therefore they did not reach consensus (Meyer & Land, 2006). Semi-structured interviews with fellow discipline experts (Magdziarz, 2016, p. 57) were conducted as a means to determine what they felt may be a threshold concept in the discipline of accounting and this resulted with emergence of two threshold concepts and a supporting theme (Magdziarz, 2016).

Due to the challenges identified when determining what constituted a threshold concept and the classification of these threshold concepts into a conceptual framework, discipline experts were more inclined to shy away from these conceptual issues so as to make accounting bearable to students (Meyer & Land, 2006). However, Meyer and Land have suggested that discipline experts identified concepts in their discipline that they felt would create a barrier to student mastery and therefore used these concepts as the focus to structure the learning journey (Meyer, 2008). Some discipline experts who resonated with this difficulty to identify threshold concepts for their respective disciplines, found that the Threshold Concepts Theory forced them to explain and prioritise the discipline-specific content taught (Brunetti et al., 2014). The evolving characteristics of the Threshold Concepts Theory framework is what presented discipline experts with difficulty when identifying the threshold concepts of their discipline (Barradell, 2013). However, a user perspective, involving the use of accounting discipline content in a broader context, may offer a potential conceptual framework for discipline experts (Meyer & Land, 2006).

The reason identifying threshold concepts was considered to be difficult and laborious is that the threshold concept "lies in the eyes of the beholder" (Decker, 2006, p. 30). Just like that of 'loaded knowledge', a type of troublesome knowledge described in Chapter Three, the identification of a threshold concept differs from discipline expert to discipline expert when it conflicted with a perspective that one felt strongly about (Meyer et al., 2010). There are individual discipline experts who have chosen to identify the threshold concepts in their discipline (Khan, 2014). Based on this choice and the fact that there are limited Accounting 101 studies with identified threshold concepts that lie "in the eyes of the beholder", I too have elected to identify the threshold concepts the chosen discipline of Accounting 101.

4.3.2 The Threshold Concepts Tutorial Programme for Accounting 101

The approach to conduct this research study was a case study approach. Case studies produced an understanding of the phenomenon being investigated with a thick, rich description of the certain instance (Rule & John, 2011). The understanding that was generated by means of a case study was fitting for the interpretivist paradigm that the study lay in. The theoretical context of this study was performed by means of a tutorial programme that involved the use of a set of Accounting 101 tutorial questions embedded with accounting threshold concepts that the students attempted during the semester. A bank of tutorial questions embedded with threshold concepts has been created for the discipline of economics and this was available from the Embedding Threshold Concepts (ETC) project created at Staffordshire University. This project utilised everyday life scenarios in order to determine whether a student's thinking had transformed after learning in a threshold concepts environment. If this transformation occurred, then the student thought like an economist when faced with economic problems in everyday life scenarios (Meyer & Land, 2006).

This practice-theory connection involved students relating their familiar practical experiences to the theory of the discipline-specific content. As the discipline progressed, the students were asked to expand on the practice-theory connection by relating the theory acquired to unfamiliar practical situations, therefore advancing to a practice-theory-practice connection (Hedges, 2014). Another example of the practice-theory-practice connection is a study conducted with students pursuing a military career, learning accounting for the first time, who were encouraged to participate actively with the discipline expert as the facilitator by drawing on their familiar practical military history experiences and the theoretical accounting knowledge acquired. Thereafter, students took charge of their learning by creating their own meanings of these theoretical accounting concepts in order to understand the unfamiliar practical accounting experiences (Miley, 2005).

An extensive search for tutorial questions for Accounting 101 and other disciplines that have threshold concepts embedded into them was conducted and have not been found to date. A set of Accounting 101 tutorial questions embedded with what I deemed to be threshold concepts were thus created for this study. This focus group of students were taught about threshold concepts and how to apply them to a tutorial question. These tutorial attempts were collected as a source of written reflection. Students were requested to reflect on their weekly experiences

as they learned in a threshold concepts tutorial programme. Journaling is a student-centred tool used to identify if students are making sense of the phenomenon being examined (Bouldin et al., 2006). These reflective learning journals were collected as a further source of written reflections. This data was used to further validate and capture the affinities identified more deeply, from Phase One of the IQA process.

4.4 Methodology Part 3: Interactive Qualitative Analysis (IQA)

4.4.1 Overview

The research methodology chosen, Interactive Qualitative Analysis (IQA), was used to analyse a semester's worth of case studies that were held in the form of tutorial sessions. This methodology is housed in social constructivism as it "privileges the nature of socially constructed meaning" (Northcutt & McCoy, 2004, p. 4). The IQA methodology is conducted in two phases in order to generate data: the first via focus group sessions and the second by means of semi-structured interviews. Data was also collected from written tutorial attempts and from reflective learning journals.

IQA was used to understand how non-major accounting students learned Accounting 101 in a threshold concepts tutorial programme. IQA was used in the areas of educational psychology, economics and managerial accounting and finance to date. After an extensive search of which disciplines the IQA methodology has been applied to, it was concluded that this will be the first time it will be applied in the discipline of accounting, using non-major accounting students more specifically. Having a background in the commerce field made using this methodology very user-friendly for me, as it comprehensively listed each step of the process. Even though IQA is a predominantly qualitative method, it incorporated quantitative data with qualitative data systematically (Bargate, 2015). This method was divided into two phases.

Phase One involved the use of a focus group to drive this phase. This type of group interview assisted to investigate participant's knowledge and viewpoints and how and why they thought the way that they did (Kitzinger, 1995). The focus group identified affinities, or as Northcutt and McCoy termed it, 'quilt pieces' regarding the phenomenon of the study. The participants then analysed the relationships amongst the affinities using an Affinity Relationship Table (ART). The relationships between the affinities were mapped to produce an Inter Relationship

Diagram (IRD). The final product was a Systems Influence Diagram (SID), a visual representation of each affinity pair relationship that had emerged. This focus group was conducted upon the completion of the threshold concepts tutorial programme.

Phase Two involved conducting semi-structured interviews in order to validate the end product of Phase One, the Systems Influence Diagram. This phase confirmed the Systems Influence Diagram results and provided a deeper meaning of the affinities created. The semi-structured interviews followed the same informal tone set in the focus group. The participants were made to feel comfortable enough to respond freely as opposed to using a 'yes' or 'no' response to the set of questions (Longhurst, 2003). The affinities identified in Phase One were used to formulate the interview questions and act as the codes used to analyse the interviews.

Limitations

As the IQA process was driven by the participants, the views of the study were focused on the students. The views of other discipline experts and external stakeholders were not taken into account. This meant that the view was only from the perspective of the Accounting 101 students. The criticism of the case study method was the generalisability. However, it was used for a deeper, holistic view to understand the phenomenon (Rule & John, 2011). The outcome of the case method did not have a generalised viewpoint. It was context specific to the participants being used. This study was limited to just one discipline expert for one discipline for one semester's worth of discipline content. This was not a true reflection to generalise to the entire Accounting 101 class as the results may differ if another researcher and another set of non-major accounting students were used.

Validity, Reliability and Rigour

When conducting qualitative research, positivist researchers used the concepts of reliability and validity. Trustworthiness was used instead by interpretivist researchers using qualitative research which was further broken down into four concepts (Denzin & Lincoln, 2011; Rule & John, 2011). Guba's view regarding trustworthiness as the substitute to reliability and rigour indicated that attention needed to be given to the transferability, credibility, dependability and confirmability of the study at hand. These are the naturalistic terms given to the four aspects of trustworthiness (Guba, 1981). Trustworthiness encouraged values like rigour, transparency and ethics in order to gain the trust of the participants of qualitative research (Rule & John, 2011).

Transferability

This concept was an alternative to generalisability or to the external validity of a qualitative study. Generalisability referred to the belief that one can predict that what is true for the sample is also true for the entire population. The findings emerging from a case study have been critiqued to not be generalised. Case study was not seen to be a strong method of knowing about one's phenomenon because of recurring patterns that emerged (Navarro Sada & Maldonado, 2007). However, one should distinguish between quantitative versus qualitative research and therein lay the difference. The point of case study research in a qualitative interpretivist paradigm was to formulate a deeper, holistic understanding of the context being investigated as opposed to statistical generalisation, being that of a quantitative research method (Rule & John, 2011).

Credibility

Credibility referred to how deeply a case study has actually reflected the reality of the case being understood. The "truth value" referred to by Guba spoke about the testing that the researcher will undergo in order to assert the credibility of the outcome of the study being conducted (Guba, 1981). Data was extracted from various sources, i.e. the focus group sessions, the tutorial attempts, semi-structured interviews and the reflective journals. This served as a form of triangulation in the case study research undertaken, as multiple viewpoints were explored (Baxter & Jack, 2008). If the study lacked credibility, then the "whole house of cards falls down" (Denzin & Lincoln, 2011). The "member checks" performed to test credibility (Guba, 1981) will not be an issue during the IQA process. The structure of the focus group permitted the participants to discuss and amend affinities in conjunction with the researcher.

Dependability

Dependability referred to the methodological thoroughness undertaken so that the research community would find the study plausible. The IQA process was a very rigid one that has steps for the researcher to follow methodically. Any "apparent instabilities" were mitigated because of this rigid process (Guba, 1981, p. 86). An audit trail of each step of the IQA research process was documented as the research was conducted.

Confirmability

The participants expressed their experiences of the phenomenon in a focus group session and developed the affinities of the study. This social construction of meaning had the effect of reducing issues of trustworthiness, dependability and conformability (Tabane, 2009). The researcher acted as a facilitator by teaching the participants the IQA process on how to generate and analyse the data that they have generated (Northcutt & McCoy, 2004). The researcher's influence was minimised. Two steps were taken when dealing with confirmability: triangulation and practising reflexivity (Guba, 1981). Reference has already been made to the different data sources that were used to confirm the findings. As the researcher, I also maintained a journal to record my introspections daily in order to practise reflexivity. Limitations, my positionality and ethical requirements were also accounted for (Rule & John, 2011).

4.4.2 Systems as Representations

Thesis: One Phenomenon, Different Representations

The elements and the relationships between these elements all created a dynamic system inside of which a single change to an element or relationship between elements, will more than likely bring about a change to most or all of the elements in the structure. This dynamism stemmed from the researcher's need to produce unity that had a desired look. This meant that the researcher in effect selected the appropriate system to represent a specific reality (Northcutt & McCoy, 2004).

Reification, Reality, and Social Construction

Human beings attributed the construction of their reality to that of social settings. Researchers undertaking qualitative research, housed in the paradigm of social constructivism, are prone to reification i.e. regarding abstract points of view as definitive, thereby constructing their reality in a social environment (Northcutt & McCoy, 2004).

Understanding a System

Systems are comprised of two component parts, the elements, which may be contrasting classifications of meaning as per qualitative research, and the relationships between these elements. Understanding the characteristics of a system implied that the researcher must ascertain what the elements of the system are, explain the relationships that existed between

these elements, recognise how the elements and the relationships between the elements dynamically interconnected to produce distinct states within the system and interpreting what exactly characterises the unity within the system. These three stages of understanding a system are specific to a single system, meaning that the phenomenon was represented from the perspective of one participant or one group (Northcutt & McCoy, 2004).

Research Questions and Systems

If a research study has only one system, then only two research questions will arise:

- What are the elements of the single system?
- What are the relationships between these elements?

If a researcher implemented the use of at least two systems, then the third question asked is:

- What are the comparisons between these two systems? (Northcutt & McCoy, 2004).

Drivers and Outcomes

A means of understanding elements and the relationships between these elements was by describing elements as drivers and outcomes. A driver is a cause or an influencer with more arrows going "out" rather than "in", with the opposite being true for an outcome. Drivers and outcomes can further be classified as primary and secondary, with primary drivers having all arrows going "out" and none going "in", and the opposite being true for a primary outcome. Secondary drivers have more arrows going "out" rather than "in", with the opposite being true for secondary outcomes. The system's elements are presented from left to right commencing with drivers and concluding with outcomes (Northcutt & McCoy, 2004).

Epistemological Acrobatics: Zooming In, Zooming Out, and Looping

'Zooming in' involved the researcher focusing on one of the elements in the system and recognising a micro system within that particular element. 'Zooming out', however, involved the researcher recognising that this micro system was one of the elements within a larger macro system (Northcutt & McCoy, 2004). 'Looping' are the recursions that provided the researcher with the means to understand the complicated dynamics within the system that are representative of conventional social systems (Northcutt & McCoy, 2004).

Rigour and The Nature of Qualitative Research

IQA methodology has a specific stance in qualitative research regarding the explanation and the application of rigour. Rigour alluded to the procedures for data collection and data analysis that are firstly, public; secondly, duplicated; and thirdly, independent of the classification of the individual elements. This third point implied that two different researchers with identical focus group data collected, would generate identical system representations by abiding by the rules of systematisation, which disregarded researcher bias. Rigour is therefore relevant and feasible in a qualitative research environment (Northcutt & McCoy, 2004).

4.4.3 IQA Research Flow

Bricolage or Petit Point

The bricolage metaphor described by Denzin and Lincoln in 2000, cautioned qualitative researchers against focusing on the detailed stitching of the individual patches, being affinities, and insisted rather that researchers focused on stitching, the relationships between affinities, the individual patches together to make an entire quilt with perhaps not as much detail. The objective of the IQA research study was to facilitate a focus group to create their own quilt and then to have each participant in the focus group create a separate quilt (Northcutt & McCoy, 2004).

The Researcher's Footprint

The IQA methodology furnished researchers with a rigid list of guidelines on how to collect data and how to analyse this data. The researcher provided the participants with a framework to engage in with a substantial degree of independence. The researcher was responsible for creating an approach that allowed the participants to generate maximum data with minimal researcher influence. After this research design was completed, the researcher then transitioned to that of a facilitator, guiding the participants through the initial stages of analysis to arrange their discourse into groups of meaning called affinities. The participants then indicated their perceptions of the relationships between the affinities named (Northcutt & McCoy, 2004).

Overview of The IQA Research Flow

The four stages of the IQA process are the design of the research, focus group session, semi-structured interviews and the report thereof (Northcutt & McCoy, 2004).

4.4.4 IQA Research Design: Thinking about the Problem

Where Do I Start?

The research design process of a research study usually commenced with the development of a problem statement, which may initially be unclear in nature and not perceived as an issue.

An Epistemological Dialectic

During the mid-1980s, Kerlinger emphasised that a clear problem statement involved a strict analysis of the relationship among variables, while Rubin and Babbie adopted a lenient viewpoint. Both, however, coupled the problem statement with the research questions (Northcutt & McCoy, 2004).

4.4.5 Group Reality: Systems Elements

In Debt to TQM

Interactive Qualitative Analysis (IQA) procedures for data collection and data analysis has its origin from Total Quality Management (TQM). These data collection and data analysis procedures are a means of aiding participants in a group to describe their experiences with a phenomenon, naming these experiences and then describing the relationships between these named experiences in order to produce a systems representation of how these participants understood the phenomenon under review (Northcutt & McCoy, 2004).

Affinities: The Building Blocks of Mind Maps

Step one of producing the mind map was to allow the participants to reflect upon their experiences with the phenomenon and to then articulate their experiences. The experiences of all the participants were consolidated and then categorised into themes or affinities by the participants as a group with the researcher facilitating the process. The group then assigned names to these identified themes or affinities. This process allowed the researcher to write a detailed explanation per affinity. The purpose of this step was to generate few affinities that

were rich in detail (Northcutt & McCoy, 2004).

During the Focus Group

The equipment required to conduct the focus group session are on average twenty-five index cards per participant, pens for each participant, sticky tape, wall space, and a tape recorder with tapes and batteries. Once each participant was equipped with the tools necessary for the session, the facilitator conducted an orientation regarding the study. Thereafter, the issue was stated and the process of reflecting on their experiences with the phenomenon silently took place. Participants were then required to articulate their experiences onto the index cards and then tape these consolidated experiences onto the allocated wall space. The facilitator then requested the participants to categorise these index cards into themes or affinities to which they were to assign a name. The researcher was also responsible for the facilitation of the inductive, axial and theoretical coding, all of which was elaborated on shortly (Northcutt & McCoy, 2004).

Designing the Focus Group

The IQA methodology commenced with the selection of a focus group with participants who have common experiences or backgrounds. This focus group was required to comprise of between twelve and twenty participants who possessed rich information regarding the issue at hand and can reflect on the questions asked by the facilitator and convert their thoughts into written words. All participants were required to have the time and willingness to participate as well as the characteristics to participate in a group dynamic: respect, not being overpowering and not too timid. The researcher should communicate the amount of time required for this study and the benefits thereof during the recruitment phase of the study so that the participants understood why and to what they are committing themselves to (Northcutt & McCoy, 2004).

Focus Group Facilitation: Preparing to Conduct a Focus Group Exercise

At the onset, the researcher is required to make the participants of the focus group feel comfortable by explaining the procedure of the activities in which they would participate. The facilitator is also required to advise the participants that this is a space in which they are free to articulate their thoughts, that their identity will not be divulged, that their participation will not to be their detriment. The use of the tape recorder to compile transcripts, the use of the transcripts and the confidentiality applied was also required to be communicated to the participants (Northcutt & McCoy, 2004).

Brainstorming the Rudiments of Meaning

The researcher asked the participants to partake in a brainstorming session as a group. This group environment promoted maximum generation of individual ideas within a group setting that was unrelated to these individual actualities. Individual participants were required to brainstorm silently for about 10 minutes, by using as many index cards as they deemed fit to document their reflections. This privacy ensured authenticity of individual's reflections by eliminating any domineering participant personalities. However, some participants may have felt helpless at the commencement of the brainstorming as they may have required conversation prompts (Northcutt & McCoy, 2004).

Inductive Coding

Upon the completion of the silent brainstorming process, the participants were asked to group these index cards into similar affinities or themes. The researcher was then required to assist the group to name each affinity and any potential sub-affinities accordingly. The term used to describe the process of categorising the index cards into different affinities or themes, is 'inductive coding'.

Axial Coding

The next type of coding that occurred was that of axial coding. This type of coding oscillated from inductive coding to deductive coding as opposed to the exclusive nature of inductive coding. The axial coding process named and refined the affinities created (Northcutt & McCoy, 2004).

Affinity Descriptions

Once the affinities have been named, the researcher then wrote a detailed explanation of each affinity using the data collected. The focus group participants had the option to engage in this phase, as their input would be valuable if the researcher needed any further clarity (Northcutt & McCoy, 2004).

4.4.6 Group Reality: Systems Relationships

What is Theoretical Coding?

The objective of the IQA methodology was to create a picture, a Systems Influence Diagram (SID), representative of the mind map of the focus group participants, with regard to the phenomenon outlined in the issue statements. A summary of theoretical codes used to capture the influences between affinities, an Inter Relationship Diagram (IRD), was used to draw the SID. The design of the IQA study involved accounting for three theoretical coding issues as follows: firstly, how much detail was required for each relationship; secondly, how the focus group was arranged for analysis of each relationship; and thirdly, how a group system was created (Northcutt & McCoy, 2004).

Issue 1: Level of Detail

The participants were encouraged to provide examples from their experiences for each affinity pair relationship that they identified. The Simple ART was the "quick and dirty" means of conducting theoretical coding and is used if time was a limitation. The Simple ART recorded each relationship pair direction without the explanation required in the form of examples (Northcutt & McCoy, 2004). An Individual Detailed ART in contrast recorded each relationship pair direction with the required explanations (Northcutt & McCoy, 2004).

Issue 2: Organising the Focus Group

The second issue was how the focus group would be arranged for the analysis of each relationship. If fifteen participants comprised the focus group, and each participant is requested to complete an ART, this meant that there will be fifteen different sets of codes. If this fifteen-participant group was subdivided into five groups of three participants, then this meant that there would be five different set of codes (Northcutt & McCoy, 2004). Individual Detailed ARTs are effective because they were a continuation of the silent brainstorming process initially conducted. The use of democracy, using the majority vote to capture the voice of the group as a whole, was another option. In intense circumstances, participants do not investigate the affinity pair relationships, but rather have an analysis that is conducted retrospectively (Northcutt & McCoy, 2004).

Issue 3: Creating a Group Composite

This issue dealt with how a group system will be created. The Pareto Protocol or the Democratic Protocol were the available options and the time at the researcher's disposal dictated which protocol to use. The Pareto Protocol is a powerful method used to chart the level of consensus within a focus group. This Protocol stated that the "minority of the relationships in any system will account for the majority of the variation within the system". The IQA methodology utilised the Pareto Protocol operationally to reach consensus, and utilised this Protocol analytically in order to produce a statistical group synthesis (Northcutt & McCoy, 2004, p. 157). When faced with a situation where the top twenty percent of the Pareto Chart consisted of hypotheses that are in favour of both directions for a pair of affinities, and both hypotheses appear feasible, the solution was to realise that there has been a failure to recognise that another affinity interconnected with the pair of affinities mentioned. These are called ambiguous relationships (Northcutt & McCoy, 2004). The Democratic Protocol however used the democratic majority vote and should be utilised if the dominant purpose was to generate an affinity list as opposed to conducting an in-depth analysis of the focus group (Northcutt & McCoy, 2004).

Focus Groups and Follow-Up Interviews

An important aspect of the focus group design was regarding whether or not interviews with the participants were to be conducted after the theoretical coding. The interview was directed by the affinities identified, the axial interview, and also included a theoretical aspect with an analysis of the relationships between the affinities from the perspective of the individual participant, the theoretical interview. These interviews have the effect of generating a richer depiction of the phenomenon under review (Northcutt & McCoy, 2004).

Creating A Group Composite: The IRD

The data generated from the focus group session was populated in a table consisting of all the relationships identified by the group called an Inter Relationship Diagram (IRD). The researcher used arrows to indicate whether each affinity in the pair was viewed as the driver or outcome or if no relationship existed between the affinity pair (Northcutt & McCoy, 2004).

Focus Group Systems Influence Diagram

The affinity pair relationships populated in the IRD are then used to create a visual representation of a system of drivers and outcomes. Feedback loops or recursions are noteworthy as they allowed the researcher to understand the complicated dynamics found within the system that are representative of at least three affinities (Northcutt & McCoy, 2004). There are three versions of the SID: The Cluttered SID, Uncluttered SID and Clean SID. The Cluttered SID consisted of all relationships within the IRD, making this diagram a very comprehensive one. The Uncluttered SID has all redundant relationships removed, allowing for easier interpretation (Northcutt & McCoy, 2004). The Clean SID is the Uncluttered SID version showing the redundant relationships in a devalued colour (Northcutt & McCoy, 2004).

4.4.7 Individual Reality: The IQA Interview

IQA was a very rigid methodology that adhered to the rules of systematisation in a qualitative research environment. The meaning of the phenomenon was represented in terms of affinities and the relationships between these affinities. The interview was therefore directed by the affinities identified in the focus group session as a second set of data collection. The first phase of the interview is called the axial interview and this involved the researcher asking the individual participants what each affinity meant to them as well as to provide their experiences with each affinity (Northcutt & McCoy, 2004). The second phase of the interview is called the theoretical interview and this involved the researcher asking the individual participants to provide an analysis of the relationships that they perceived to be between the affinities (Northcutt & McCoy, 2004).

Preparing for the Interview

The researcher needed to be cognisant of the content and the logistics prior to the commencement of the interviews. It was imperative that the researcher had an in-depth understanding of the protocol established for the interview as well as for each affinity identified. Even though the interview commenced with agreed upon interview questions, the researcher needed to not only reply to the participant, but also needed to navigate the conversation as per the direction the participant chose to follow. The in-depth understanding of the researcher had the added benefit of allowing the researcher to focus intently on what the participant had to say as well as respond appropriately. The logistical set-up involved the

researcher conducting an equipment check of the tape recorder, tapes and batteries. This also involved having hardcopies of the ART and a list of affinities in the event of an unforeseen circumstance. The purpose of these checks and having backup documents, was to not waste time during the interview, but to rather interact productively with the participant (Northcutt & McCoy, 2004).

IQA Interview To-Do's

Upon meeting the participant, the researcher was required to introduce themselves and furnish the participant with a brief overview of the research study. The researcher was also required to then ask the participant general information about themselves relevant to the study in order to create a comfortable environment that was conducive to the participant responding as honestly as possible (Northcutt & McCoy, 2004). Once the researcher established a good rapport with the participant, the researcher was then required to commence with the four phases of the interview. The first phase involved the researcher presenting the participant with a list of the affinities and the accompanying descriptions of each. The second phase involved the researcher asking the participant to share their reflections of their experience with each affinity. The third phase involved the researcher asking the participant further questions to gather examples of the participant's experience. The fourth phase involved the participant using the ART provided to indicate all possible relationships between the affinity pairs (Northcutt & McCoy, 2004).

4.4.8 Individual Reality: Systems Relationship

The objective of both the group reality and individual reality was to represent the respective realities as mind maps. The analytical tools used in both realities was the same with the exception being the use of the Pareto Protocol that was used to create a composite mind map based on individual interviews (Northcutt & McCoy, 2004). Consensual processes allowed for a focus group to generate a single IRD and a single SID, while subordinating individual perspectives to the group's reality for two reasons: firstly, there was an underlying assumption that all participants shared in the construction of the issue statement reality; and secondly, the individual interview allowed for examination of differences between affinity meanings and the composite interview mind maps "triangulate", to some extent, the focus group reality (Northcutt & McCoy, 2004, p. 238).

4.5 Conclusion

This chapter described the existing methodologies used in the discipline of Accounting 101 and the Threshold Concepts Theory and the reasons for using the methodologies and methods adopted by this study. The next chapter describes how the participants were finalised for the study as this selection was made prior to the lockdown of the country due to the COVID-19 pandemic.

CHAPTER FIVE
FINDING MY PARTICIPANTS DURING COVID-19

5.1 Introduction

This chapter commences with the ethical considerations of the study. This is followed by an explanation of the experiences the study encountered when finding the participants prior to the lockdown and the imperative redesign that was necessitated by the COVID-19 pandemic. Thereafter the newly-designed study and the assortment of online platforms used throughout the study are described.

5.2 Ethical Considerations

After obtaining permission from the Registrar of the chosen university to conduct the study, I then had to wait for my Ethical Clearance to be obtained (see Annexure 2, 3, 4). The process was commenced by liaising with the Academic Leader of Accounting and the Coordinator of the Accounting 101 discipline in order to request permission to use their students as participants in the study. The methodology and the duration of the study was discussed with the Academic Leader and Coordinator. Once this permission was obtained, I then liaised with the Accounting 101 discipline experts, who indicated that the student body was divided into two streams. This meant that permission needed to be requested from each Accounting 101 discipline expert in order to appeal to their students during their respective introductory lectures with a brief presentation of the study. I indicated that my study involved the use of non-major accounting students, who were studying Accounting 101 in their respective programmes. After the brief presentation of the study, I left the students with my email address and the unforgettable conclusion that I had made when I was introduced to the Threshold Concepts Theory, in order to entice them to participate in my study and hopefully make their study of Accounting 101 an enjoyable one: *Think smart, not hard. Focus on the concepts.*

5.3 Finding the Tutorial Venue

The framework used was a theoretical framework called the Threshold Concepts Theory. The theoretical context of the study was to be performed by means of a tutorial programme that involved the use of a set of Accounting 101 tutorial questions embedded with what I deemed to be accounting threshold concepts, that the students attempted during the semester. The qualitative methodology used was called Interactive Qualitative Analysis (IQA) and it consisted of a two-phased methodology, that of a focus group and the use of semi-structured interviews to validate the results of the focus group phase.

The Accounting 101 student body comprised of students from different programmes. The programmes that were of interest to this study were the ones that did not have the discipline of accounting as their major. I therefore appealed to the Bachelor of Business Science students, the Bachelor of Administration students and the Bachelor of Commerce General students, all of whom had no intention of majoring in accounting. I am currently a discipline expert in the field of Taxation 3 and I also have a stream of students to lecture and tutor weekly in the Bachelor of Commerce in Accounting programme.

As the threshold concepts tutorial programme and the two-phased IQA methodology were additional programmes, they could not be incorporated into the weekly double period session allocated for the mainstream tutorials due to time constraints. I then had to liaise with the Timetables and Venue Bookings Office in order to find a time and venue that did not clash with the four programmes mentioned. Only two streams of weekly double period sessions were available to accommodate the study, both of which were booked tentatively for the entire semester prior to selecting which of the two streams would be utilised. Towards the end of February 2020, at the commencement of the first semester, all interested students to date were emailed regarding two information sessions that were to be hosted in the last week of February 2020, during the two streams of weekly double period sessions tentatively booked. These two information sessions were used to explain the Threshold Concepts Theory in more detail using the introductory article by Cousin in 2006. The structure of the study, what was required of each student, as well the finalising of which of the two weekly double period sessions were to be used, depending on the number of interested students, was explained in these information sessions.

Once the weekly double period session was finalised, the remaining stream was cancelled, and the first threshold concepts tutorial was booked for 13 March 2020. A weekly booklet for each student that comprised of the tutorial question, paper for their tutorial attempt, and paper for their weekly reflective learning journal was made. The first booklet made comprised of the following additional items to the weekly tutorial question and two sets of paper: a pen, the 'Informed Consent' document, a 'Getting to Know You' semi-structured interview schedule, a Myers-Briggs Type Indicator semi-structured interview schedule and sweets (see Annexure 5, 6, 7). Of the fifteen participants, only six attended the tutorial. The remaining students did not attend as they had a test that afternoon. From discussions with the six participants who did attend, it was found that some possessed a prior knowledge of accounting from their high school careers. They were also at different topics as per the lecture plan, as both Accounting 101 discipline experts lectured at different paces. The three programmes, the Bachelor of Business Science, the Bachelor of Administration and the Bachelor of Commerce General, that the participants were enrolled in, and the disciplines within each of these programmes, had assessments over the semester that were bound to clash with the tutorial programme at some point. Rescheduling to a later week for each clash, meant that the time available to complete the data collection would decrease.

5.4 The Impact of the COVID-19 Pandemic on Data Collection

On 23 March 2020, South Africa was subjected to a lockdown that commenced on 26 March 2020 from midnight, in order to contain the spread of the coronavirus disease (COVID-19). After much consideration regarding the constraints faced when finding a tutorial venue, and then the lockdown of the country with the suspension of all non-essential activities, which included teaching and learning at university sites, the data sources, data generation and data collection methods had to be reassessed in order to proceed with the study. The context of COVID-19 and the impact it had on data generation and data collection methods had to be considered when conducting this study. This therefore meant that the study had to be redesigned by using online platforms to interact with the data sources in order to generate and collect data via these platforms. The context of COVID-19 was therefore considered as an opportunity during the uncertain time that the country faced.

5.5 Finding the WhatsApp Messenger Group

Universities were then faced with the challenge of devising online learning programmes immediately. Lecture slides and tutorial questions were made available to students weekly for those students who elected to try to study at home. The online learning programme at the chosen university to conduct the study, commenced on 1 June 2020, which meant that there were seven weeks available to implement the threshold concepts tutorial programme and IQA methodology using a newly-designed online platform. Students indicated that they were not keen to continue with the programme once their online learning programme commenced due to time constraints. Hoping that the students would also perceive this seven-week period as an opportunity, all interested students were then emailed as the time and venue clash, as well as assessments being written, and the pace of each discipline expert were no longer constraints. Of the fifty interested students emailed on 8 April 2020, thirty-three indicated that they would participate and provided me with their cellular telephone numbers. Thereafter a detailed description of the study, what was required of the students and the commencement date of 13 April 2020, was communicated to the interested students. By 12 April 2020, the day before the commencement of the data collection, an email or WhatsApp Messenger message was sent to the students who had not responded, to ask if they were comfortable with what was required of them. By the evening of 12 April 2020, six students replied with reasons as to why they were no longer able to participate, and seven students have not replied to date. The reasons students were no longer able to participate were as follows:

- *I am facing challenges in accessing the network in this side* ☹
- *Yes, I am, it's just that I can't do somethings like logging into Moodle for the slides which I need for studying*
- *I'm sorry, I'm not interested anymore, it's not easy to study anymore with all the uncertainty of when we are even resuming academic programme*
- *Hi – I am just having problem with data and the network here is bad*
- *I thought this was extra classes*
- *Thank you so much. I think I'll leave. I had a different expectation.*

This study was thus left with twenty students who became the participants of the study who were ready to navigate their way through this newly-designed online learning journey. The participants were then emailed to determine if they all had the online platform, WhatsApp

Messenger, so that a WhatsApp Messenger group could be created in order to make communication easier and faster. Every participant indicated that they did utilise the WhatsApp Messenger platform, and thereafter the 'PhD Non-Major Kiddos' WhatsApp Messenger group was created as the platform to communicate throughout the study. Following this, the Informed Consent document, the article by Cousin in 2006 that provided an introduction to the Threshold Concepts Theory, as well as the first two semi-structured interview schedules to complete, that of a 'Getting to Know You' document and a Myers-Briggs Type Indicator document, were sent to the participants via the WhatsApp Messenger group chat. The 'Getting to Know You' document required the participants to populate basic information like their name, cellular telephone number, what programme they were studying, whether they studied accounting in school or not and their preconceptions regarding accounting as well as their preconceptions and expectations of the threshold concepts tutorial programme.

5.6 The Best Way Forward

Upon creating the WhatsApp Messenger group and sending the introductory documentation, the participants were then asked if they had the necessary resources to communicate on this online platform, primarily that of data and a mobile device or laptop. The utilisation of other online platforms, like Zoom, Loom or Skype, for example, to conduct the tutorial sessions and IQA methodology, was also put forward as a suggestion to the participants. All participants indicated that they had cellular telephone data or Wi-Fi data, but the vast majority were not prepared to use online platforms other than WhatsApp Messenger due to high data consumption. This implied that the newly-designed study using an assortment of online platforms was subject to change, depending on the resources of the participants.

The participants returned the semi-structured interview schedules and Informed Consent documents via WhatsApp Messenger. They used the following methods to send their responses: Adobe Acrobat, Windows Photo Viewer with either a typed or handwritten image, a Word Document, a WhatsApp message. The signature required on the Informed Consent was a hurdle for some participants. The participants were sent step by step screenshot images to the WhatsApp Messenger group on how to use the signature feature on Adobe Acrobat. A few participants used Windows Photo Viewer with either a digital or handwritten image, and one participant attached her signature as an image to a Word Document.

5.7 Conclusion

This chapter described the imperative transition made from the conventional face-to-face platform to that of an online one as a result of the COVID-19 pandemic. The assortment of online platforms that the participants utilised in order to send their responses in this introductory part of the data generation and collection, set the tone for the next two parts of the study, the threshold concepts tutorial programme and the Interactive Qualitative Analysis (IQA) methodology implemented.

CHAPTER SIX

IQA DATA COLLECTION AND ANALYSIS PROTOCOL DURING COVID-19

GROUP REALITY: SYSTEMS ELEMENTS AND AFFINITY DESCRIPTIONS

6.1 Introduction

This chapter commences with an overview of the research questions and systems relevant to the Interactive Qualitative Analysis (IQA) methodology. This is followed by the systems elements of the group reality from the commencement of the methodology process. Thereafter the affinities generated by the focus group participants are explained in detail.

6.1.1 Systems as Representations: Research Questions and Systems

If a research study has only one system, then only two research questions will arise:

- What are the elements of the single system?
- What are the relationships between these elements?

If a researcher implemented the use of at least two systems, then the third question asked is:

- What are the comparisons between these two systems? (Northcutt & McCoy, 2004).

As the study utilised the Myers-Briggs Type Indicator as the second system, this required the third research question to be asked (Northcutt & McCoy, 2004). These three questions have to be answered in this sequence and the third question was answered in Chapter 11 when analysing the how the second system, the Myers-Briggs Type Indicator, compared to the first system, Interactive Qualitative Analysis (IQA).

6.2 Group Reality: Systems Elements

6.2.1 During the Focus Group

As the study was conducted using online platforms, the conventional face-to-face protocol used during the Interactive Qualitative Analysis (IQA) methodology, described in Chapter Four, also had to be redesigned. Instead of being able to provide the participants with the focus group equipment prepared prior to South Africa being subjected to a lockdown, the study had to use cost effective online platforms with user-friendly documentation. This was to ensure a smoother process of data generation and data collection, while also being time effective, as there was a limited period available to interact with the participants. In the interest of saving time, the generation of issue statements was conducted by attaching a document with questions (see Annexure 8) that requested the participants to write down or type up approximately twenty issue statements in response to these questions, that they were requested to complete individually and return in preparation for the online focus group session. Upon receipt of the participants' issue statements, it was found that each participant had listed their issue statements with the corresponding questions sent. All issue statements were therefore collated per question and the collated document (see Annexure 9) was sent to the WhatsApp Messenger group chat in preparation for the inductive coding to be completed as a group. This process therefore eliminated the need for the index cards, pens, sticky tape, wall space, tape recorder, tapes and batteries, as all activities were recorded on the WhatsApp Messenger group chat and WhatsApp Messenger individual chats. As the researcher, I was also responsible for the facilitation of the inductive, axial and theoretical coding, all of which was elaborated on shortly (Northcutt & McCoy, 2004).

6.2.2 Designing the Focus Group

The selection of the IQA participants was discussed in Chapter Five. As the focus group was conducted during a pandemic, the conventional face-to-face protocol could not be adhered to. The use of online focus groups was elected in order to connect with the participants who were studying from their respective homes at scattered locations within the province. The study had to therefore adopt one of the three approaches used to conduct online focus groups. The first approach was that of an asynchronous group that is facilitated over a long period of time at the leisure of the participants. This approach could not be adopted as time was a limitation. The

second approach was that of a virtual worlds group that is facilitated using a simulated environment with the use of avatars. This approach could not be adopted as the participants were unfamiliar with it. The third approach was that of a synchronous group that is facilitated in real-time. This approach was adopted, as it closely resembled the conventional face-to-face approach (Stewart & Shamdasani, 2017).

Most studies have utilised the approach of an asynchronous group and studies that have utilised the approach of synchronous groups have rarely investigated the effectiveness this approach has had with the younger generation (Fox et al., 2007). As the participants were studying Accounting 101 at university level, this implied that they belonged to approximately the 18-year-old age group, making them part of the younger generation that have rarely or never been exposed to an online focus group. The synchronous group approach utilised an assortment of online platforms to communicate. The online platform that the participants elected to utilise was that of an instant messaging platform (Stewart & Williams, 2005), WhatsApp Messenger, that was facilitated in real-time. The maximum number of participants some researchers recommend for an online focus group is between six and eight (Stewart & Williams, 2005). IQA methodology conducted using a face-to-face focus group recommended between twelve and twenty participants. This study elected to utilise the number of participants recommended by the IQA methodology as this methodology cautioned against using fewer participants. The utilisation of fewer participants for the affinity generation stage is not as consequential a problem as that of theoretical coding, as fewer voices can distort the data since one participant in a focus group of five, for example, will have the effect of impacting twenty percent of the data (Northcutt & McCoy, 2004). All participants indicated that since the commencement of the lockdown, while they were waiting for their academic activity to resume, that they all had available time and were willing to participate in the study. This willingness was confirmed a few days prior to the commencement of the study as well. Participants were also made aware of the fact that the study would assist them to try to keep up to date with their Accounting 101 studies (Northcutt & McCoy, 2004).

The study also tried to use Guided Imagery to a very small degree when explaining the issue statements relevant to the study in order to invoke the affective aspect of the phenomenon. As the student cohort being investigated were non-major accounting students, who mostly had negative preconceptions of accounting, the study tried to focus their attention on the

phenomenon, that of the learning of Accounting 101, and that the participation in the study would be an enjoyable learning experience, as participants were encouraged to *think smart, not hard and to focus on the concepts.* The use of this degree of Guided Imagery mirrored the principle advised by Mies Van Der Rohe, being "Less is more" (Northcutt & McCoy, 2004, p. 90).

6.2.3 Focus Group Facilitation: Preparing to Conduct a Focus Group Exercise

The focus group session date was communicated to the participants via the WhatsApp Messenger group chat with the option to provide alternative dates and times if these were not suitable. The participants were given a task to complete individually and were asked to return their responses prior to this focus group session date. They were also made aware that instructions for the focus group session would be made available on the day. Participants were encouraged to answer as honestly as possible as all information communicated on the WhatsApp Messenger group chat would remain confidential and that their participation and responses was not to their detriment. These clear instructions and creation of a safe space in which to communicate, provided the participants with a level of comfort prior to and on the day of the focus group session (Northcutt & McCoy, 2004).

6.2.4 Brainstorming the Rudiments of Meaning

The purpose of the brainstorming session as a group in the face-to-face environment was to generate the maximum number of individual ideas by writing down as many issue statements to the questions asked by the facilitator on the index cards provided for a period of approximately 10 minutes. This process of privacy had its advantages and limitations. (Northcutt & McCoy, 2004). Instead of conducting this brainstorming session at the commencement of the focus group session, a document was sent to the participants a few days before, with questions regarding the participants' learning journey. The participants were then requested to individually generate approximately twenty issue statements as responses to these questions and to then return these so that the responses of the group could be collated. This process was similar to the silent brainstorming session as it was conducted by the individual participant as it also had the advantage of reducing group pressure to respond like the other participants but allowed for the authenticity of the participant reflections. It also provided

introverted participants with the full time to generate responses that they may have otherwise been afraid to vocalise (Northcutt & McCoy, 2004). Participants had the opportunity to message me, as the facilitator, privately if they needed clarity regarding the questions sent. They also had the added advantage of having a few days to complete the issue statement generation and could therefore add more ideas, even if it was a day or so later. Some of the limitations of the silent brainstorming process were that some of the extroverted participants may have felt overwhelmed as they were better at articulating their thoughts out loud. Other participants may have felt helpless or alone when commencing with the brainstorming process as they may have required conversation prompts from other participants in order to assist them (Northcutt & McCoy, 2004). However, this limitation was of no consequence as participants felt free to ask me via private messaging if they were unsure of anything. This process therefore eliminated the need for the index cards and pens used in the face-to-face environment.

6.2.5 Inductive Coding

The receipt of the participants' issue statements via WhatsApp Messenger indicated the completion of the silent brainstorming process. Each participant had listed their issue statements with the corresponding questions sent. All the issue statements were then collated per question and the collated document was sent to the WhatsApp Messenger group chat in preparation for the group activities for the day. The focus group session started at 2pm on a Sunday, the agreed upon time and day of the participants. The participants indicated that Sunday, after Church and lunch, was an ideal time as they were available and rested and would be using their ample weekend cellular telephone data. Fourteen participants of the twenty attended. The outstanding six participants were privately messaged to remind them to attend the focus group session. After sending the collated document to the focus group, the focus group was sent the following instructions (see Table 1) for the day:

Table 1: Group Activity Instructions

GROUP ACTIVITY INSTRUCTIONS

1. Group the issue statements.
   - You may group the issue statements into similar themes.
   - You may use each question as a theme.
   - You may subcategorise each theme into more than one theme.
2. Name each theme.
3. Analyse the relationship between each pair of themes (→, ←, —)
   - I have drawn up tables for you to complete.

EXAMPLES

1	→	2	Theme 1 influences theme 2
3	←	4	Theme 4 influences theme 3
5	—	6	No relationship between themes

The first group activity for the focus group participants to complete, was to review the collated issue statements document and to then group the issue statements into similar themes or affinities (Northcutt & McCoy, 2004). As all the participants listed their issue statements per question, they were presented with two methods of grouping the issue statements before being asked if they identified any subcategories. The first method participants were presented with was the option to group the issue statements into similar themes. The second method participants were presented with was the option to use each question as a theme. In the face-to-face environment, the participants were asked to silently review the index cards that they taped onto the wall and to then group these index cards into similar themes. The participants elected to use the second method as each participant had already listed their issue statements per corresponding question asked. The focus group indicated that they did not identify any subcategories per theme. The word ‘theme’, and not ‘affinity’, was consistently used with the focus group as this was a familiar word to them all. For the purposes of the study, the word ‘affinity’ was used where relevant going forward. This first group activity eliminated the need for the index cards, sticky tape, wall space, tape recorder, tapes and batteries, used in the face-to-face environment as all activities were recorded on the WhatsApp Messenger group chat.

Thereafter, the focus group was directed to the second group activity for the day, that of naming each theme. The participants started by reading the first question and participants, at random, started to suggest possible names for each theme. As the facilitator, I assisted the focus group to name each theme accordingly. The term used to describe this process of categorising the issue statements into different themes, was that of ‘inductive coding’.

6.2.6 Axial Coding

The next type of coding that occurred was that of axial coding. This type of coding oscillated from inductive coding to deductive coding as opposed to the exclusive nature of inductive coding. The axial coding process named and refined the affinities created (Northcutt & McCoy, 2004). As the participants had different names for each affinity, I had to facilitate the naming as well as the refining of the allocated name especially if participants did not agree or needed more clarity.

6.2.7 Affinity Descriptions

Once the affinities had been named and all participants had reached consensus, I had to then write a detailed explanation of each affinity identified, using the data collected (Northcutt & McCoy, 2004).

6.3 Affinity Descriptions

6.3.1 Affinity 1: Learning Experiences

"After all that's happened I, I wonder if I, I don't care..."

(Carroll, 1951, 37:02)

This affinity described the learning experiences of the participants throughout the threshold concepts tutorial programme. Participants felt learning to be a challenge as they had to self-study before attempting the tutorial questions; however, they persevered when faced with these learning challenges as they learned how to make the relevant connections to the concepts. Some participants found that learning in the threshold concepts environment was interesting and more useful than the actual lecture content provided. Others found that the threshold concepts explanations made the discipline content clearer as only the important information was provided, therefore making it easier for them to understand what they had learned from the textbook. Others enjoyed self-studying and being able to ask me for assistance when needed.

Participants who did not self-study initially, found that they grasped some of the concepts from the programme, which equipped them with some knowledge before interacting with the lecture content, while some participants used the programme as their only learning source for some

topics. Others who were surprised that they had actually learned during the pandemic, found the tutorials to be an informative, understandable means to improve their learning style. Even though the participants felt nervous at the commencement, their confidence and work ethic improved over the duration of the programme. Participants also perceived the programme as unique and helpful, as this platform allowed them to identify their mistakes and to learn from them based on the detailed explanations provided. Below are descriptions provided by the focus group participants of this affinity.

- *Concepts understood in a more interesting way. TC seemed more helpful than the lecture content.*
- *I experienced that this programme explains Accounting 101 more clearly by only giving important information about the Accounting concepts, in other words it simplifies the information and makes it easier for me to understand what I learned in the book.*
- *I've been struggling with it since it's the first time I'm doing it since grade 9 especially in terms of terminology.*
- *Learning certain concepts without the aid of a tutor/ lecturer did prove to be challenging. However, I gained more confidence in the subject. Learning to link concepts was another skill gained. As well as perseverance while stuck on a problem.*
- *My experiences with learning Accounting 101 concepts was quite unique, helpful and informative to my understanding. It was a great experience. I began to acknowledge my mistakes and learnt from it.*
- *The Accounting 101 Threshold concepts enlightened my knowledge and understanding about the accounting equation, debits and credits.*
- *It was self-explanatory and I read the textbook to understand what I was doing.*
- *It was tricky. It took me some time to really understand what was going on. I had to read the textbook to understand what was needed.*
- *It was good. I learnt a lot from reading the textbook. A great experience thus far.*
- *It was okay. Even though I did not read over the section before attempting I grasped some knowledge.*
- *It was great. VAT section is quite easy and I just love it.*
- *It was good. Theory questions are my strong point so I know I've grasped much in this tutorial.*
- *They were very helpful as it helped to revise on those concepts. It was also very*

beneficial as it helped clear up certain misunderstandings.

- *Was extremely good. I always got help if I failed to understand a concept.*
- *Found the tutorials to be informative and understandable. Great experience. Found improvements in my learning styles. Found it helpful as it got me learning during this pandemic.*
- *It was a learning experience which helped me identify the basics of accounting to an extent. The threshold concepts help me understand in what way I need to approach my learning in accounting 101.*
- *I learn to look at accounting in a reflective way in keeping with the threshold concept.*
- *My experience while learning Acc 101 through the tut programme has been very enlightening.*
- *It has opened up my mind to new learning methods.*
- *Without the help of a tutor/ lecturer learning certain concepts have been difficult. Although, I have gathered confidence in this subject. I also learnt how to link concepts, and to never give up while being stuck on a problem.*
- *From the onset these Threshold Concepts brought nervousness but as time goes on I gained confidence towards Accounting 101 hence it improved me dramatically and in general my work ethic.*
- *My perception about ACCT101 was that it was an undoable module.*
- *Loved it.*
- *It was very helpful.*
- *It broadened my knowledge of the accounting 101 concepts.*
- *Extremely informative.*
- *Beneficial.*
- *Effective outcomes.*
- *Things become more easier.*
- *Threshold concept explain well to me they give me exactly what I'm looking for in Accounting 101.*
- *The tutorial programme has been the only source of learning in some areas.*
- *The TC explanation helped in getting me to understand each concept.*
- *Because of Sasha 🧚, this has felt like more than a tutorial programme, it's sorta like a cause now 😆.*

- *I feel it's helping me learn at a faster pace than I would have otherwise.*
- *I think my experience was good.*
- *Learning the Accounting 101 was stress free and easy to understand.*
- *Knowing the key concepts was very important and getting notes that steered me into the right direction.*
- *Relaxing…I felt no pressure to know everything but take my time with it.*
- *It was good.*
- *It was a great experience and beneficial. It helped clear up misunderstandings.*
- *Throughout it was surprisingly good learning experience. There were many difficulties I faced during the programme and reading through the concepts and explanations really helped connect the dots. Overall, I had a very positive learning experience.*
- *It was great. I had fun.*
- *It was helpful and informative. I could always ask you for assistance.*
- *At first pretty easy but since I didn't do it in grade 11 and 12 it was difficult to get back into it, but I feel doing the tutorials with the threshold helped me understand much better and understand the concepts easily.*
- *It was good as I got to interact with the tutorials and you, and the explanations given.*
- *It was beneficial and interesting as it helped me gain basic accounting knowledge.*
- *Very promising, it should me a new way of learning effectively.*
- *I have benefited from the study. The threshold concepts have been of great help. It's all about quality and not quantity. I really enjoyed being a part of it.*
- *It wasn't difficult, it was manageable. I can now be independent.*
- *I learnt a lot. I got a lot of work for accounting done. The explanations for the concepts helped understand what I didn't know.*
- *It was informative and helped build my confidence.*
- *It was a great experience; things became more easier and it was effective.*
- *I had to get help with answering questions. I learnt some of the concepts on my own and I am proud of myself. The textbooks provided a lot of assistance.*
- *I feel it helped me work at a much faster pace than I otherwise would have.*
- *It was good. I liked the pace and working with myself.*

6.3.2 Affinity 2: Adopting a Holistic Approach to Learning

"Some go this way, some go that way. But as for me myself personally, I prefer the shortcut."

(Carroll, 1951, 57:20)

At the outset most participants, especially those who had not studied accounting at school, were scared about learning accounting and thought that they may just memorise the concepts. However, they were determined to work harder and pay careful attention to the concepts that they experienced as difficult. Those who had studied accounting, but possessed a negative preconception of the discipline, also referred to their high school resources and tried to perceive accounting in a more positive light. Participants knew that they had to study the lecture content provided by their discipline experts, being the textbook, textbook videos and practice examples before attempting the threshold concepts tutorials provided. However, quite a few participants indicated that they preferred to attempt the threshold concepts tutorial questions provided before utilising the lecture content. Participants felt that learning the threshold concepts first proved to be more helpful, as they felt more confident after understanding what the threshold concepts were and why they were used before applying them to the lecture content provided. The participants were then advised to reattempt their tutorial attempts for each topic and this method was also employed and proved to be useful when learning to identify the relevant threshold concepts. Despite their fear of accounting, participants felt more at ease by approaching their learning of accounting by focusing on the core principles, i.e. the threshold concepts of the discipline and not everything. Below are descriptions provided by the focus group participants of this affinity.

- *Learning Accounting was also very challenging. It felt scary to learn new things at first.*
- *My approach was not good because I attend lectures at campus without having an idea about what we were going to do in class and when I was in class, I got more confused. I didn't know what they were doing or explaining.*
- *Watching YouTube videos and trying to see how they answer different questions (for our tuts).*
- *To read and understand concepts of a chapter, then move on to practice examples of it. I find past papers to be quite useful as well.*
- *I did not like accounting at first, it was a scary subject for me because it felt like I was*

confused.

- *Initially, I was quite scared and confused about the rules and basics of accounting.*
- *I thought it would be difficult and I would not understand it.*
- *I was getting confused. I did not understand much of what was happening. I was kind of lost.*
- *I thought it was confusing. I didn't know what the bank statement had in common with the general ledger. I didn't know what a bank recon was.*
- *It was average. It's similar to Bank Reconciliation so that was my advantage.*
- *I thought that I could not wrap my head around the VAT concept, so I decided to read the chapter slides and TC before attempting.*
- *I've read the tutorial question and answer. Then I read the explanation to try and make sense of what I read. Basically, to understand the tutorial.*
- *My approach was to work harder and be more attentive in working. To try and understand concepts I had difficulty with.*
- *I dreaded learning Accounting this semester as I was nervous that I wouldn't understand or grasp the module completely.*
- *At first, I was nervous with regards to studying this subject as it had always been a challenge. Eventually open minded and ready for challenges. With this tutorial group and my experience thus far, I have realised the concept of quality over quantity.*
- *I was scared as I did not do accounting in school so was worried about grasping the concepts.*
- *I was concerned as to how I will grasp all accounting concepts in a space of less than 6 months.*
- *Attend my lectures, refer to resources for high school and work with it every day. Look at the subject more positively and not beating up myself for getting things wrong. Also watch videos that might help me get a better understanding.*
- *To read each question carefully and analyse each aspect of the question.*
- *To understand exactly what they require me to do.*
- *To read and understand the concept of the chapter, then move onto practicing examples of it. Past papers are extremely beneficial.*
- *Memorise it instead of understanding it.*
- *To gather as much knowledge as possible and practice as much as I could.*
- *Going over lecturers Notes.*

- *Doing activities given as work.*
- *Self- learn textbook chapters to learn as much as could understand.*
- *Attempting and re-doing Tutorial questions from programme.*
- *Making my own notes.*
- *I started by learning basic concepts.*
- *Reading lecturers slides and attempting every tutorial we were given.*
- *My original approach was to listen in class an get as many Acc friends as possible.*
- *Now I study Accounting with online learn accounting website.*
- *Following the lecture outlines and tuts.*
- *Understanding for me because some concepts I don't understand clearly, and I would forget and struggle in the past.*
- *For me, I would take my time in trying to understand and ensure that whatever I was having a problem with is probably understood.*
- *Trying to understand the core principles of accounting and not everything.*
- *I guess I was trying to know everything and just shove as much information in my head.*
- *Attending lectures, reading notes, making time for studying.*
- *Originally, it was to try different exercises, and I thought that going through exercises repeatedly would be the best option but later on through this study, I found that learning the concepts first and then attempting the exercises helped more because understanding the concepts and why we do them is just as useful as putting them into practice and doing the exercise. Now, my method of approach will be to learn the content first and then try the activities.*
- *Informative as I had to read over the notes before I could attempt the questions.*
- *Read the textbook and then compare the tutorials to the examples.*
- *Generally, read the tutorial and question and if I didn't understand I would refer to the textbook or ask you for help.*
- *It was educational and unique as I learnt more with the explanations.*
- *I read the tutorial and then work through the textbook for an understanding.*
- *Ready question and then required.*
- *I liked the fact that the threshold focuses on understanding the concepts and I think this method of approach will be of great help in the near future.*
- *I had to study the chapters first then attempt the questions.*
- *I gathered information and then practiced and thereafter attempted the question.*

- *I did activities and self-taught myself.*
- *To follow all the instructions, you gave me and to attempt all tutorial questions.*
- *For each tutorial I look at the question then I look in the textbook and find the solutions.*
- *Read the chapters in the textbook and then attempt the tutorials and after receiving the solutions I would go over it to see if I could identify the concepts.*
- *Read up first and then attempt the questions.*

6.3.3 Affinity 3: Various Learning Outcomes

"And I love the change, should something strange begin..."

(Carroll, 1951, 55:05)

In addition to learning the outcomes of each topic in the Accounting 101 discipline content, participants also indicated that they were viewing the discipline differently. They were astonished that they could grasp concepts that they could not understand prior to this programme. This meant that they had understood why the concepts were important and the role it played in their everyday lives. Participants were also proud of the fact that they could engage in a conversation about Accounting 101 with their peers who had studied Accounting 101, as well as with those who did not. They indicated that they were confident about the knowledge they acquired and that they were ready to apply this to their daily lives. This eye-opening experience enabled participants to apply these threshold concepts to their studies and made them think like accountants. One of the participants felt that it was challenging to self-study and that she needed the support of their discipline experts in a face-to-face environment. Other participants who experienced learning challenges indicated that they understood most of the work before engaging with the threshold concepts tutorial explanations, which helped to solidify the concepts being tested. Others who experienced learning challenges explained that they experienced difficulty at the onset, but after utilising the threshold concepts explanations, their understanding had either improved immensely or their understanding of the topic was made easier and they were able to complete the tutorials with ease. Participants found the programme to be rewarding and were confident enough to articulate that they were performing well in the programme which in turn resulted in them excelling when engaging with the lecture content as well. They had found a new way of learning by having a firm understanding of the threshold concepts of the discipline in the form of the feedback and explanations provided in the tutorial programme. Below are descriptions provided by the focus group participants of this

affinity.

- *Great experience. Gained more confidence. Get knowledge.*
- *I believe my outcome is going to be better now as I have more time to study and catch up during this lockdown and I have this tutorial group to help me understand better.*
- *I understand that money goes two ways between buyers and sellers.*
- *I can say I view the subject differently- in the sense where I have learnt the reason behind the concepts which has allowed me to apply them more appropriately. It has also made me realise the importance of Accounting and the vital part it plays in our everyday lives.*
- *It was a real eye opener as I discovered there was more to my potential than I could ever imagine. I gained self-confidence and I learnt to link different concepts to make sense of my work.*
- *I learnt which types of accounts are to be debited and credited. I have also learnt the format of a journal entry.*
- *I learnt how to calculate profit on a cash basis. P/L = I – E.*
- *I have learnt the threshold concepts on how to adjust a journal entry.*
- *I learnt how to prepare a bank recon, update the bank acc in the GL and other accounts, and how to compare previous month BRS with present bank statement.*
- *I learnt how to prepare a creditors reconciliation statement and a remittance advice. I learnt to compare debits with credits.*
- *It's astonishing. I learnt how to write journals with VAT. Input/ Output VAT.*
- *It was good. I know the difference between Expenses and Dividends, Ordinary and Preference dividends and the different shares with the right to be redeemed. Eg. A loan.*
- *I understood the method and concepts. I feel more at ease that I can attempt these types of questions.*
- *If I compare my current feeling to my initial feeling, I'd say I'm a lot more positive about understanding this module and I'm more confident and determined to conquer this subject.*
- *Learned to join concepts. Get experience. Thus with regards to the concept tests, performed better than expected. Helped me understand concepts through self-teaching. Allowed for me to spend more time on this individual module.*
- *Still really hard identifying and grasping the basics. The lecturer made it quite simple*

and I was grasping and understanding the concepts but due to the corona virus it made self-study of accounting really challenging.

- *I'm not quite sure yet but I feel somewhat confident.*
- *If was extremely beneficial as I learnt new things about Acc that I never knew in high school.*
- *It helped me understand Acc better.*
- *I have learnt the reasoning behind focusing on concepts, thus applying them more appropriately. I have also been made aware of the importance of Accounting and how it impacts our everyday life.*
- *I can talk about ACCT101 to my peers with confidence especially the ones who did not do it. I can apply accounting on my daily basis of life.*
- *Accounting 101 has been a lot of fun to learn.*
- *It was more enjoyable than I expected it to be and there has been many things that I have learnt that I could use in my future financially.*
- *With keeping in my approaches, I have become more confidence and I am more positive when it comes to learning new concepts in Accounting 101.*
- *Now am familiar with many concepts in Accounting.*
- *I think I will be well prepared for exam.*
- *I don't really know yet, I haven't gotten a chance to prove myself.*
- *Quite good I feel.*
- *I am not completely there in terms of my understanding, but it has improved immensely.*
- *Learning Accounting 101 this semester has taught me to be able to learn on my own and find understanding on my own.*
- *Understanding.*
- *I hope understanding.*
- *They were very helpful. The explanation of the threshold concept helped me understand the accounting concepts better than the textbook.*
- *Overall, I managed to get most of the learning outcomes except for bank recon statement. From the beginning to the end, I really struggled with bank recon. Before reading your explanations, I managed to understand most of the word and after reading your explanation it solidified whatever concepts I was trying to learn.*
- *It was quite impressive because I grasped concepts I didn't understand before.*

- *I now can identify and understand concepts.*
- *A little challenging at first but after working and prioritising my accounting I found I could do everything with ease.*
- *It was rewarding, I did quizzes, and I performed well.*
- *I've gotten used to answering questions. The accounting and threshold concepts helped explain very well.*
- *It helped me understand the questions better.*
- *The threshold has really helped me understanding the concepts and in turn excelling in the tutorials. I have come to know a new way of learning, which is understanding the concepts. I have taken many lessons from the study.*
- *Positive outcome.*
- *I did struggle for some of the learning outcomes, but after reading the threshold concepts explanation it was easier to understand.*
- *I built confidence and got better at the subject accounting.*
- *I was gaining from attempting them and looking at your feedback. My experience grows as I reattempt the questions once looking at your feedback.*
- *I got most of the questions right.*
- *I feel after I read and attempted everything, I understood it well.*
- *My understanding has improved in terms of terminology and concepts.'*

6.3.4 Affinity 4: Demystified Threshold Concepts Infused Materials

"Read the directions and directly you'll be directed in the right direction."

(Carroll, 1951, 8:33)

Participants were willing to utilise the threshold concepts tutorial programme to their benefit during the pandemic in the newly-designed online platform, by applying their understanding to the tutorial questions, eliminating the errors they had made and ultimately having a clear insight of the newly learned concepts of the discipline. Participants were happy to work at their own pace when completing the tutorial questions as this allowed them to work in advance and receive help from me at a time that suited them, day or night. Participants who engaged with the lecture content felt that the threshold concepts tutorial questions were more effective in helping them to obtain the duly performance requirements that they needed to fulfil. The participant who did not engage with the lecture content felt the tutorials to be average as he had

a different expectation of the tutorial programme. Participants also identified that the purpose of the tutorials were not just to learn Accounting 101 concepts, but that the tutorials were designed in a manner that was familiar to them and therefore user-friendly, which allowed the understanding of the concepts to be acquired from an easy format. The participants appreciated that the explanations provided were broken down into a step-by-step explanation which allowed participants to piece together or integrate the information of the discipline. The demystified threshold concepts infused materials therefore inspired participants to go deeper into the discipline content. Below are descriptions provided by the focus group participants of this affinity.

- *The tut group was helpful.*
- *Yes.*
- *Yes.*
- *The tutorials, alongside the explanations proved to be useful. More exercises to enforce concepts learnt would prove to be valuable.*
- *The tutorials were average because I wasn't taught the threshold concepts before attempting it. Once I became aware of the concepts it became a little more helpful to me.*
- *Yes, it was a simple explanation that made sense to my understanding.*
- *Yes. It helped me to realise my mistakes.*
- *This tutorial was effective. It really helped to understand Accrued expenses, Prepaid expenses, Accrued income and Income received in advance. As well as, bad debts, doubtful debts, depreciation (diminishing balance method) and on hand.*
- *The tutorial was average because it didn't explain how to do a BRS before I could attempt it. I had to read a whole chapter to understand it.*
- *The Threshold concept explains everything so that helped a lot. Yes, it explains what is happening.*
- *Yes! Most definitely. It was essential and to the point.*
- *Yes, most definitely! Explanations were on point and essential.*
- *Yes, I have.*
- *The tutorials have 100% helped me in understanding Acc 101 a lot better.*
- *During this pandemic it was very helpful as the threshold concept gave me a clear insight to the concepts. Began to put my understanding into practice.*

- *To an extent… I think the idea and the concepts are perfect to help students grasp and understand but should be simplified in a way as it can be confusing. I think if it was done in person at campus with Ms Sasha explaining it in detail it would have been much more effective.*
- *Yes, the tutorials in this study. The one in the main module, no. I just go for the DP.*
- *Yes, it has.*
- *It was helpful and very understanding.*
- *The tutorials and explanations have been extremely beneficial. It helps us enforce the concepts that we have learnt.*
- *The Threshold Concepts Theory has been very effective and they helped me a lot.*
- *Yes, it has made learning Accounting 101 much more easier.*
- *Yes, I have found the tutorials in the Accounting 101 program extremely effective. With these tutorials it gave me a chance to help test my knowledge, eliminate my errors and learn new concepts.*
- *Yes.*
- *Yes, the tutorials give a threshold student a chance to get practical.*
- *Accounting needs practice and the tutorials are practice.*
- *Very much so.*
- *Yes…I do because we went at our own pace and when I would not understand Sasha was always there to help.*
- *The tutorials also focused on not just Accounting as a whole, but in key aspects that would help to get greater understanding.*
- *So far yes.*
- *Yes.*
- *It was very effective. It improved my understanding of accounting.*
- *It was quite effective, given the circumstances.*
- *They were more helpful than I anticipated especially getting the explanations afterwards. I find that it's helpful to get something wrong and then read why you got it wrong, this helps learning it easier.*
- *High level effectiveness because the solutions explained everything that I needed to know. The solutions explain everything separately which helps putting everything together whilst attempting the questions.*
- *Very effective, the solutions were very well broken down and that assisted.*

- *Threshold concept is a lot more effective than just the accounting concepts. Threshold concept went more in-depth and will help students who didn't do accounting in a while as it makes things easier to understand.*
- *It was educational, the lecturer did not go over the work as well as it was done during the tutorial and I therefore learnt from my mistakes from attempting the tutorial.*
- *They did help, it was very useful. It cleared out certain things.*
- *It was effective. It cleared up any doubts I had.*
- *The tutorials have been very beneficial. I was extremely pleased that each tutorial was taken from the textbook.*
- *The explanations were very good. They assisted a lot as it contained important information, It Enlighted me a lot. I now dive deeper into the questions.*
- *It was effective, I understood afterwards. It made learning each concept easy as it broke it down and I knew what was happening.*
- *It helped me understand concepts and pick up on concepts I missed out on when studying.*
- *Very effective because you teach me how to answer the questions and I became familiar with how questions are asked in the examination. The step-by-step explanation helped a lot.*
- *It was very effective; it helps me a lot.*
- *The explanations are nice because they break down everything and provide detail.*
- *It assisted and was very effective. It helped me understand the concepts.*
- *It was easy to understand. It was not complicated. It was user friendly.*

6.3.5 Affinity 5: Learning Challenges

"Oh dear. Now I shall never get out."

(Carroll, 1951, 54:04)

The majority of the participants indicated that they experienced learning challenges with two tutorials, Bank Reconciliation Statements and Adjustments, but that that they were able to overcome these learning challenges after utilising the threshold concepts explanations provided. Participants were encouraged to not feel apprehensive about making mistakes, as this was a platform that they should feel confident to learn from. This platform allowed them to feel more comfortable about identifying their mistakes, rectifying them immediately and

therefore see this as a positive learning experience. One of the participants experienced time management as a learning challenge from the onset, but overcame this once he realised that they were working at their own pace with me to assist them when needed. A fair number of participants indicated that they had not experienced any learning challenges, but instead felt the programme was straightforward, with the occasional struggle, and that they clearly understood everything, despite the tutorial questions appearing to be tricky in nature. One of the participants displayed feelings of doubt, even when being right. All the participants demonstrated remarkable resilience throughout this tutorial program during the COVID-19 pandemic and overcame learning challenges that they never expected to in this platform. Below are descriptions provided by the focus group participants of this affinity.

- *Difficulty in understanding Adjustments.*
- *None of them were challenging.*
- *I'm not sure.*
- *Preparing a bank reconciliation as well as adjustments (accrued expense, income etc.) were challenging, but once I read through the explanations, I found my mistakes quickly and rectified them.*
- *Preparing a bank reconciliation was the most challenging task for me. Debits and credits were also mind boggling as it always confused me.*
- *In the accounting equation, the types of accounts that needed to be debited and credited.*
- *None. I understood what the accrual concept and cash basis means.*
- *Depreciation and bad debts were challenging for me. Also, trying to find the contra accounts at times.*
- *Which balances am I supposed to bring down.*
- *How to prepare a remittance advice and Creditors reconciliation statement.*
- *Gladly, none!*
- *None.*
- *Bank reconciliation.*
- *Tutorial 4 and 3.*
- *Difficulty in week 2 preparing profit calculations in accrual and cash basis. Difficulty in the overall format.*
- *Most of them to be honest. Grasping the main idea of each concept can be challenging.*
- *Tutorial 1, tutorial 2, tutorial 3.*

- *None, I wouldn't say it was straightforward, but it was understandable.*
- *There were tricky questions, but I understood it clearly.*
- *Adjustments (expense, accrued expense etc.) and preparing a bank reconciliation was challenging, but the explanations helped me understand the concepts much better.*
- *Struggling with BRS.*
- *Adjusting journal entries.*
- *I found Tutorial 7 which involved the threshold concept of 'Redeemable Cumulative Preference Shares Repayable at a Specified Date vs Loan' the most challenging for me. Although I was able to learn from it.*
- *Troublesome.*
- *Transformative.*
- *Week 4 so far.*
- *Bank recon.*
- *I don't think I had a problem anywhere …there were struggles her and there but ultimately, I go through them.*
- *So far none.*
- *None so far.*
- *Adjusting journal entries but the explanations helped a lot.*
- *Bank reconciliation and the cash basis of accounting and the accrual basis.*
- *Debits and credits, bank reconciliation and depreciation because I did not know formulas and I did not understand concepts.*
- *I had to read and understand a few times.*
- *Tutorial 4 was difficult as I only covered the topic by doing the tutorial as there was no lecture for it.*
- *Unpleasant for me, time management was a problem for me, but I eventually overcame it.*
- *No challenges.*
- *No challenges.*
- *I did have many challenges, but the explanations helped me fully understand.*
- *There were challenged but I was able to overcome them.*
- *Adjusting journal entries was a challenge but the threshold concept assisted me to understand.*
- *I saw it as something positive because it was an area where I could make mistakes but*

learn from it.

- *It was difficult to study online using a cell phone to communicate.*
- *I was alone and did not have anyone to teach me. I had to pick up on my mistakes and learn from it.*
- *Bank reconciliation. I attempted the tutorial got it wrong but then I started understanding it more.*
- *I doubt myself a lot, even when I'm right I still doubt myself.*

6.3.6 Affinity 6: Emotional Responses

"Curiouser and curiouser."

(Carroll, 1951, 7:46)

The negative preconceptions that the participants possessed towards accounting, prevailed in this affinity. Participants indicated that they were scared, worried, and dreaded accounting to such an extent that they did not want to engage with accounting prior to commencing their studies. However, over time, as their knowledge and understanding of the discipline improved, so too did their attitude towards the discipline and as such participants were motivated to gain a deeper understanding of the concepts and therefore engaged more than they expected to with the discipline content. Participants indicated that their knowledge and understanding of the discipline was attributed to the fact that they felt the tutorial programme was an effective platform for them to grasp the concepts of the discipline, and that as they practiced, their knowledge and understanding of the learning challenges that they encountered then made them appreciate the discipline more.

Many participants indicated that their experience of learning accounting was not as bad as they had imagined it to be and that their negative preconceptions of the discipline were actually a false preconception. They indicated that their initial discomfort was replaced by feelings of enthusiasm and enjoyment and ease as they engaged with the tutorial programme. They felt that the tutorial programme was a platform that allowed them to learn the mechanics of the discipline. It also provided them with the clarity they needed regarding the new concepts learned, as well as allowing them to acquire particular skills that they could not forget, being irreversible in nature. The fear towards the discipline that they had initially felt, motivated them to work hard in order to understand the concepts and therefore resulted in participants feeling

confident about their accounting knowledge.

Other participants expressed that they felt that this tutorial programme was a stress-free environment as they could complete tutorial questions at their own pace and that there was no pressure imposed on them to know everything as they were here to learn. Participants felt that they belonged to a specially designed threshold concepts group and that they were proud of their accomplishments, especially when their calculations balanced, as they had persevered and overcome the learning challenges they were faced with. This led some participants to be more curious about the discipline and what more it had to offer. They felt the threshold concepts tutorial group was amazing and that their experiences in the tutorial programme were definitely worthwhile. Below are descriptions provided by the focus group participants of this affinity.

- *TC groups are amazing. Challenging. Worth it.*
- *I was scared because most students say it's challenging, and I've never studied it before.*
- *Frustrated.*
- *Overwhelmed. It can be daunting learning many concepts (which are already familiar to students around myself). Accounting is not a subject to be rushed, in order for students to grasp concepts, many exercises with thorough explanations should be given.*
- *Learning Accounting 101 was not as bad as I imagined it to be. I became more enthusiastic about accounting. The tutorial helped me to understand better and I picked up certain skills that I cannot forget.*
- *It was not that bad. Once I understood the rules of the accounting equation, it became easier.*
- *It was not as hard as I thought. I understood by reading the textbook.*
- *It really helped me and made a lot more sense when I became aware of the concepts.*
- *It was much better than previous attempts. I really enjoyed it because I learnt something new.*
- *It was new to me, so I felt overwhelmed and nervous.*
- *I felt good and positive about the topic VAT. It seemed like a pretty cool topic to crack!*
- *It was okay. The notes weren't difficult to understand. Short and sweet.*
- *I felt slightly challenged. I was motivated to work and attempt these tutorials. I feel more confident about Accounting.*

- *Felt scared and nervous at first but now at ease and more confident.*
- *Was fun. Really excited when my calculations balance.*
- *Hard due to self-studying because of the corona virus. It made a first-time accounting student find it much harder as self-tutoring a subject such as accounting 101 is hard without being taught.*
- *It still gives me anxiety, because I never know what to expect in tests and my marks. It's a subject I have never been ready for.*
- *Excited.*
- *Curious about other aspects which are related to Acc.*
- *Overwhelmed. It was difficult learning to adapt many concepts. In order for students to perform in Accounting many exercises have to be done with thorough explanations.*
- *It is indeed a very intimidating and challenging module.*
- *At first it was a little hard, but it became easier with practice and I enjoyed it.*
- *Being a student who has not done accounting before, I was unconfident and scared when it came to this subject. Although overtime my understanding and knowledge in this subject started to build and so did my attitude towards wanting to do better in Accounting 101.*
- *I feel comfortable.*
- *Sometimes it's challenging and lead to unnecessary anxiety.*
- *Honestly, I felt like I'd fail if I didn't do my best.*
- *I felt like I should always be up to date.*
- *I felt much more comfortable and at ease than I originally anticipated.*
- *Relief…there was no pressure to know everything.*
- *Stress free…I got to go in my own pace so that was nice.*
- *At first nervous but it's not bad.*
- *Nervous.*
- *They are helpful and motivated me to attempt the tutorials.*
- *Throughout it wasn't a very fun ride but I think those challenges makes you appreciate the subject more because I found that in the beginning, I didn't want to touch accounting at all and now I want to pick up the textbook and understand the concepts more.*
- *I've learnt a whole lot more compared to from lectures. You (Sasha) were always there to help at any time of the day.*

- *In the Beginning I was worried but as I worked through the tutorials (Bank recon and creditors recon) I was able to understand and grasp the concepts.*
- *At the beginning of the semester, I was dreading accounting but after attempting the tutorials I started understanding. The tutorials I did with you was very effective.*
- *It was great because I gained educational skills and methods to learn.*
- *At first, I was frustrated and then when I saw familiar questions, I liked it.*
- *It was exciting and rewarding.*
- *I have benefited greatly from the study.*
- *I was anxious and then at the end I was at ease.*
- *It made me more confident and I felt good.*
- *The more I got involved in the programme the more I learnt.*
- *I felt comfortable, although it was challenging it was nice.*
- *I felt a part of something. It made me feel like I belong. I felt proud of myself for learning accounting.*
- *I feel more comfortable approaching the subject.*
- *There are sections I'm very confident in but still doubt myself.*
- *It is less stressful.*

6.3.7 Affinity 7: Perceptions

"After this I shall think nothing of falling down stairs."

(Carroll, 1951, 6:22)

This affinity indicated that the perceptions of the participants had changed drastically from the commencement to the completion of the tutorial programme. Even though only one participant had indicated that they could not understand why they could not grasp the concepts, the rest of the participants explained the transformation they had experienced. Participants no longer saw themselves as a below average student in their Accounting 101 class, as the knowledge base that they acquired provided them a sense of hope. Participants were adamant about obtaining the best marks that they could in this discipline so as to avoid writing any supplementary assessments. Participants who felt they could learn the concepts without lectures indicated that they found the tutorial programme more beneficial than the lecture content, and therefore felt more confident when approaching the discipline content.

The rest of the participants explained the transformation of their understanding. They indicated that they were all growing as individuals as they interacted with the discipline content. Participants felt that accounting was actually not hard, but required them to apply themselves in a specific way in order to gain a full understanding. The scenarios in the tutorial questions were designed in a such a way that made it easier for participants to gain this full understanding. Participants were also committed to spending time working hard with the discipline content which resulted in them also performing well in the tutorial questions. Participants were amazed that they could understand concepts that they never expected to as they were more informed by the threshold concepts explanations and how to respond to questions based on the step-by-step format laid out in the tutorial programme questions.

Participants also indicated that they felt like completely different people upon the completion of the tutorial programme. One of the participants indicated that they had grown mentally over of the duration of the programme as this platform allowed her to not experience the usual high levels of stress that she was accustomed to, but to rather experience learning accounting in a threshold concepts environment. Despite participants possessing a negative preconception of the discipline and the threshold concepts tutorial programme prior to engaging with the study, they decided to try their hardest to apply their minds to the programme. Even though participants thought that the programme may not have been as effective as they envisioned it to be and that they may not have been able to cope with the tasks assigned to them and therefore not do well. This however resulted in them not only improving, but performing quite well, as they engaged with the tutorial programme and were finding themselves grasping the threshold concepts faster than originally anticipated. The participants indicated that the tutorial programme was the platform that changed their negative preconceptions into that of a positive one which caused them to feel more confident as the discipline content actually made sense to them. Other participants admitted that instead of their original plan to dedicate their time to watching Netflix while waiting for their online learning programme to commence on 1 June 2020, they instead found themselves being dedicated to working hard while learning the threshold concepts and were confident about the progress.

One of the participants was quite succinct about her perceptions of herself over the programme, using the word “accomplishment” to aptly describe her perception. Other participants found engaging with the threshold concepts programme from the commencement to be easy as they could resonate with the design of the tutorial questions immediately and therefore became more

confident when understanding the discipline concepts. Some participants hoped to obtain 60% for Accounting 101 prior to the commencement of the programme, and upon completion of the programme they were confident that they would obtain an A aggregate as they felt that the threshold concepts tutorial programme was effective and that if implemented to all students, that they would also improve. Participants felt that the one-on-one assistance provided by me to each participant enabled them to give a "stellar performance" throughout the programme and they were confident that they would continue to perform this way going forward. Participants indicated that they had grown and could see how one of the topics related to the degree that they were studying towards and that they amazed themselves time and time again over the duration of the threshold concepts programme. Below are descriptions provided by the focus group participants of this affinity.

- *Accomplishment.*
- *I want to get good grades in accounting without writing any supplementary tests.*
- *Battling with why I can't seem to grasp it.*
- *There were ups and downs. I know that when I work at a topic enough, I can understand it and do well. The times when work is challenging leaves me fatigued, often at times frustrated. But this is the learning process.*
- *I feel I have grown in this subject compared to where I was initially. I have changed the perception of my own self and that makes me happy and overwhelmed. I grew in understanding because the scenario made it easier.*
- *I began to understand the reason why accounts are debited and credited. I understood which accounts are debited and credited. I learnt how to do a Journal entry.*
- *I actually understood what I thought I could not understand. I'm growing in this subject and understanding stuff I thought I never would.*
- *I understood how to do a General Journal entry, as well as the rules needed to do it. It was quite challenging for me. I had to get my head around it.*
- *I grew in understanding. I caught up fast with comparing statements.*
- *I have learnt quite a bit of work with tutorials compared to just reading & lectures.*
- *I've definitely learnt how Vat works in the supply chain process. I've grown and amazed myself, not once, but time and time again.*
- *I've become more informed and aware of my actions. I'm a different person compared to where I was at my first tutorial.*

- *I am slow in working. I tend to make careless mistakes often. I need to be more focused.*
- *I felt like I should not be struggling at all now but at first I wasn't too confident about Acc 101 and would not participate much in tuts.*
- *Hardworking 😳. Confident. Dedicated, as instead of watching Netflix😂 I was learning through the threshold concepts.*
- *That with a lecturer I would actually do well and grasp but due to this pandemic everything is going counter to my perceptions.*
- *Was hoping for improvement. I was hoping for an understanding of things I needed to change when studying for Accounting. I realised I'm very pessimistic about this subject. The base knowledge I have gives me hope.*
- *I have developed a new and broader aspect about Acc.*
- *That accounting is not really hard. It's how you apply yourself to the question. I feel that I have developed this aspect.*
- *I did have my fair share when it came to struggling with certain topics, but working at it all the time helped me understand it better and do better.*
- *I thought that I would be able to grasp the concepts and be able to learn it especially with no lectures, but the tutorial programme has helped a lot and made me more confident towards the module.*
- *Throughout learning Accounting 101 I went through numerous emotions. When I started with accounting in the first few weeks, my perception was of me not seeing myself as being able to do well in this subject and I had a negative mindset. Although when I had started the Accounting 101 Tutorial program it really helped me turn my negative mindset into a positive one and my perception of myself in this subject changed to be knowing that I could understand and learn the concepts of Accounting 101 and also challenge myself.*
- *I want to obtain good marks in Accounting.*
- *I saw myself in the bottom half of the whole Accounting class.*
- *I saw myself as a below average mark learner.*
- *I was impressed at how quickly I grasped the concepts.*
- *I think I have grown mentally and I didn't worry or stress a lot and panic like I would usually do.*
- *I am also much more focused.*
- *Not sure yet.*

- *Not sure yet.*
- *In the beginning I had numerous negative emotions but at the end I feel more confident.*
- *At the beginning I didn't have a good perception, I told myself I wouldn't be able to do most of it and how will I cope with it but towards the end I realised it's not actually that bad and that if I put my mind to it I can do it.*
- *In the beginning accounting was scary for me and now it makes more sense, I have grown from that time to now.*
- *In the beginning it was easy as I was used to it and now, I've become more confident and understand more concepts.*
- *At the beginning I was hoping for a 60% but now I can confidently get an A. With the threshold it makes everything a lot easier. If other students used the threshold concepts, they would also be much better.*
- *Quite good. The threshold concepts made my way of thinking broad.*
- *My opinion towards accounting changed and I like it although I'm not always good at it.*
- *I had to read the textbook for each topic and it gives you the understanding.*
- *My understanding after each tutorial increased after going over the explanations.*
- *I see myself doing exceptionally well and with you by my side I can give a stellar performance.*
- *I thought it will be hard, but I thought it could probably help me, and with the lockdown it provided more time to do work.*
- *During the programmed my perceptions was that I could learn new things and if I allowed myself to attempt the challenges I faced I could get better at it.*
- *I'm more confident. I continued to improve from the time I started.*
- *At the beginning of the tutorial, the required would not make complete sense to me but I always completed what I could do.*
- *At the beginning I was nervous, but I was impressed by how quickly I grasped the concepts. The threshold concepts helped me.*
- *In the beginning I did not think it will be effective, but I still gave it a try and it turned out to be good.*

6.3.8 Affinity 8: Learning Attributes

"Oh pooh, I'm not afraid of you."

(Carroll, 1951, 1:11:05)

Most of the participants indicated that they either became confident or more confident than they originally were upon completion of the tutorial programme as they found that the tutorial design encouraged them to understand and learn the threshold concepts being tested. This confidence was also attributed to the new and improved learning style they had adopted from the tutorial design which allowed them to stop doubting their abilities and therefore became mentally stronger when confronted with learning challenges. Participants also indicated that when confronted with these learning challenges, they also learned to be patient, as some concepts took longer to understand than others, and they knew that they would fully understand them if they persevered. Participants also became confident enough to offer their opinions as opposed to confusing themselves and overthinking. Participants also adopted a more positive attitude as they found that they had acquired a better understanding of the discipline content. They were then motivated to work harder and to be more focused, by paying close attention to the details of the discipline content. Participants felt that not only had they developed the ability to learn new concepts presented to them, but they also found that they could easily spot these new concepts and could answer tutorial questions much faster and with more detail than they initially provided. As this tutorial programme required the participants to self-study prior to attempting the tutorial questions, participants found themselves being able to self-study and manage their time appropriately and therefore sacrifice their leisure time, for example eating a snack, until they had completed the tutorial question. Participants also learned to adapt to this environment and became more comfortable using the online platforms available to them. Overall, participants became savvy enough to realise that the quality of the threshold concepts, was better than the quantity of the entire body of knowledge in order to master the discipline of accounting. Participants also felt like their minds were now programmed to think about the Threshold Concepts Theory characteristics that a threshold concept possessed when they encountered the next threshold concept. Below are descriptions provided by the focus group participants of this affinity.

- *It was fun working as a group. Increased my confidence. Tuts were encouraging. The tut helped me understand the examples in the book.*
- *It's the DAX = LIC formula and that "DAX" increases on the debit side and decreases*

on the credit side and on the other side "LIC" increases on credit side and decreases on debit side.

- *Assets = Equity + Liabilities*
- *Perseverance. Confidence. Were the main attributes acquired during the programme.*
- *I have become more focused and enthusiastic. It brought me to an optimistic experience. I have a greater picture of what's going on. I am more positive.*
- *I have learnt which accounts to classify as assets, equity and liabilities. I have learnt that assets increase on debit side and decrease on credit side whereas, equity and liabilities increase on credit side and decrease on debit side.*
- *I understood: Profit/Loss = Income – Expenses. Cash Basis means to recognise the cash once it is collected. Accrual Basis means to recognise the cash once the transaction takes place or earned, not necessarily collected.*
- *I have learnt Accrued income, Accrued expenses, Prepaid expenses, Income received in advance, depreciation, Bad debts, doubtful debts and on hand.*
- *I learnt how to prepare a BRS, update the GL and other accounts. I learnt how to compare previous month BRS with current BS.*
- *Skilled. Confident. Self-motivated. Alert.*
- *Positivity. Enthusiasm. Goal-driven. Focused. Enlightened.*
- *Cheerful, timely, calm state of mind, happy place, inspired, uplifted, motivated, attentive and concentrated.*
- *I am more focused. I am harder working. I am much more confident.*
- *I can now easily spot concepts and I can answer questions a lot quicker and in-depth.*
- *Time management. The ability to not snack until I have completed the task in front of me. Sacrifice over everything will lead to success ☆.*
- *Grasping the focal points of the threshold concepts were hard but certain concepts did bring clarity to understanding the basics is fundamental for grasping accounting as a whole.*
- *I feel more motivated. It has a refreshing rigour.*
- *I think I have fine-tuned myself by not rushing each question and making stupid mistakes.*
- *Not overthinking.*
- *Perseverance. Confidence. Are the main attributes achieved during this programme.*

- *Adaptable.*
- *Productive.*
- *Patient.*
- *Motivated.*
- *Become more confident.*
- *Have the ability to learn and tackle new concepts.*
- *Become more positive.*
- *Specific concepts or key words of every chapter we have did.*
- *The way of answering Accounting questions.*
- *Also patience and kindness*  *.*
- *Besides actually learning the concepts I think the TC programmed (no pun intended) my brain to always think of TC characteristics that a concept possesses every time I come across a new concept in accounting.*
- *I feel my learning style has improved and it helped with my confidence when approaching the module.*
- *For me I think I don't get overwhelmed with the questions and information because I used to overthink everything and confuse myself but now I don't get confused.*
- *My ability to understand…. My understanding has improved too.*
- *Not sure... still figuring it out.*
- *I think so far knowing how to analyse and understand what is required for the tutorial.*
- *Gained confidence and understanding of accounting.*
- *I have become more informed, more positive, more self-driven, more mentally strong and confident.*
- *A lot more confident and positive and focused.*
- *A lot more confident and determined to ace accounting.*
- *It was pleasant because I gained educational experience.*
- *Interpretation skills, self-learning skills.*
- *Helped me stop doubting myself. It improved my timing.*
- *I was able to progress greatly using threshold concepts and the assistance from Sasha.*
- *I learnt that quality is better than quantity.*
- *I'm more confident now and give my opinions.*
- *I was productive by doing research and trying to do the work. I learnt how to gain*

patience as some concepts took long to understand.

- *At the end it built my confidence, I was able to tackle any challenge and became more positive.*
- *Patience and I became more comfortable with using technology.*
- *I have acquired the skill of learning accounting by myself.*
- *All the resources provided does assist a lot.*
- *My learning style has improved.*
- *I'm paying more attention to detail, I'm able to breakdown the question and I understand more.*

6.4 Conclusion

This chapter described the systems elements of the group reality from the commencement of the Interactive Qualitative Analysis (IQA) methodology process to the write up of the detailed explanations of each affinity generated by the focus group participants during the COVID-19 pandemic. The next chapter continues with the IQA methodology process by describing the systems relationships of the group reality and the IQA interview of the individual reality.

CHAPTER SEVEN

IQA DATA COLLECTION AND ANALYSIS PROTOCOL DURING COVID-19

GROUP REALITY: SYSTEMS RELATIONSHIPS AND INDIVIDUAL REALTIY: IN THE IQA INTERVIEW

7.1 Introduction

This chapter commences with the systems relationships of the group reality followed by an explanation of the theoretical coding issues the study is presented with. Thereafter the individual reality of the methodology process is explained in the form of the Interactive Qualitative Analysis (IQA) interview.

7.2 Group Reality: Systems Relationships_What is Theoretical Coding?

The objective of the IQA methodology is to create a picture, a Systems Influence Diagram (SID), representative of the mind map of the focus group participants with regard to the phenomenon outlined in the issue statements. The study elected to use the group reality and not the individual reality to create a mind map of the participants. A summary of theoretical codes used to capture the influences between affinities and an Inter Relationship Diagram (IRD), was used to draw the SID. The design of the IQA study involved accounting for three theoretical coding issues as follows: firstly, how much detail was required for each relationship; secondly, how the focus group was arranged for analysis of each relationship; and thirdly, how a group system was created (Northcutt & McCoy, 2004).

7.2.1 Theoretical Coding Issue 1: Level of Detail

The participants were encouraged to provide examples from their experience for each affinity relationship that they identified. The Simple ART is the “quick and dirty” means of conducting theoretical coding and is used if time was a limitation. The Simple ART recorded each relationship pair direction without the explanation required in the form of examples (Northcutt

& McCoy, 2004). An Individual Detailed ART in contrast recorded each relationship pair direction with the required explanations (Northcutt & McCoy, 2004).

7.2.1.1 Adapted Simple ART

As time, as well as the logistics and the administration of the newly-designed online platform was an issue, the study implemented an adaptation of the Simple ART during the focus group session. Even though the authors were of the view that in order to generate the richest study, a researcher needed to complete the entire IQA process, it would however be naïve to assume that all researchers and participants will have the adequate time and means to do so (Northcutt & McCoy, 2004). The third group activity for the focus group participants to complete was to analyse the relationship between each pair of themes identified. Tables were drawn up for the focus group to complete. The group activity instructions also explained that arrows and dashes needed to be used in order to complete these tables and a set of examples describing what the forward arrow, backward arrow and dash meant in relation to the themes identified. The focus group participants were provided with eight tables, as eight affinities were generated, to complete the analysis of the relationship between each affinity pair relationship identified.

7.2.1.2 Individual Detailed ARTs

Upon the completion of this five-hour group activity, the participants were given a sufficient period of time to rest before they were asked to complete Individual Detailed ARTs. The goodwill of the participants had to be appealed to in order to complete this lengthy document, as time was a limiting factor (Northcutt & McCoy, 2004). Each participant was sent a document with the eight affinities identified, a set of examples describing what the forward arrow, backward arrow and dash meant in relation to the themes identified, eight tables and space for an explanation of the affinity pair relationship identified.

In a face-to-face environment participants would have been provided with pre-printed documents and tables at the focus group session (Northcutt & McCoy, 2004) regardless of the type of ART elected for creating the group composite.

7.2.2 Theoretical Coding Issue 2: Organising the Focus Group

The second issue was how the focus group was to be arranged for the analysis of each relationship. If fifteen participants comprised the focus group, and each participant was requested to complete an ART this meant that there will be fifteen different sets of codes. If this fifteen-participant group was subdivided into five groups of three participants, then this meant that there will be five different set of codes (Northcutt & McCoy, 2004). Individual Detailed ARTs are deemed to be effective because they are a continuation of the silent brainstorming process initially conducted. The use of democracy, using the majority vote to capture the voice of the group as a whole, is another option. In intense circumstances, participants do not investigate the affinity relationships, but rather had an analysis that was conducted retrospectively (Northcutt & McCoy, 2004).

7.2.2.1 Adapted Simple ART

For the Simple ART in the face-to-face environment, the facilitator recorded the analysis of the affinity pair relationships by the majority show of hands (Northcutt & McCoy, 2004). The ARTs may be completed by each participant or the focus group may be organised into smaller groups, being dyads or triads, groups with two or three participants (Northcutt & McCoy, 2004). As it would have been a challenge to administer each dyad or triad in an online platform, the study instead used the entire focus group to record the analysis of the affinity pair relationships by majority show of hands, meaning that one set of codes from fourteen participants of twenty who attended the focus group session on the day was obtained.

For the Simple ART eight tables were drawn up as there were eight affinities identified. Below is an example of the first (see Table 2) of the eight tables (see Annexure 10). This table was comprised of three columns. The first column listed only the first affinity, whilst the third column listed all the pairing options relevant to the remainder of the affinities identified. The second column was populated by the participants with either a forward arrow, backward arrow or a dash after they had analysed the relationship between each pair of affinities identified.

Table 2. Adapted Simple ART Table 1

1		**2**
1		**3**
1		**4**
1		**5**
1		**6**
1		**7**
1		**8**

Instead of strictly adhering to the face-to-face protocol for the Simple ART, its use was slightly adapted as it was implemented via WhatsApp Messenger in an online platform. Instead of asking for a show of hands per affinity relationship, the participants were instead asked to complete eight tables as a group. One table was given to the focus group at a time for them to complete. One participant was elected per table to chair the facilitation of reaching consensus with majority vote as the means. The reason this study chose participants to chair select parts of the discussion was so that all the voices of the participants would be heard instead of just a few domineering voices. Participants appeared to be keen to do this as they could see that they were taking charge of their learning. Once the first table was sent to the focus group chat, the chairperson asked the participants for their thoughts and suggestions. Some participants commenced by completing the table by themselves and sending their perspective to the focus group. These options posed to the focus group were then analysed by all participants and some participants decided to choose the table option that resonated most with them, whilst other participants provided the focus group with the amendments that they would make to a chosen table and an explanation as to why. Thereafter participants responded to these amendments and made further amendments or even added a new table with their perspective and supplementary explanations. The chairperson concluded the table allocated by using the majority vote method per affinity pair relationship based on the debates and explanations of the focus group.

Even though the online focus groups are convenient and cost-effective to the participants and facilitator, there are inherent challenges identified too. As this platform utilised instant messaging only, this meant that with the lack of a video function, the visual prompts from the participants could not be considered. Another challenge presented was the limited degree of control by the facilitator (Hinkes, 2020). Examples of the limited control that was experienced in this study was that some participants joined the focus group session either a little late, or not at all, or were inactive for brief periods. These participants had to be privately messaged to either remind them to join or to participate a little more, meaning that not all the voices of the

participants were heard equally. Researchers also have to be cognisant of the fact that participants may have used the internet to search for the answers to the questions being asked. Most of the participants did not know each other from the large classroom environment prior to the lockdown, and they used this anonymity and the absence of a video function to their advantage. This yielded in most participants actively engaging with rich responses and sometimes questions to the questions asked as they did not have the fear of being intimidated by the more interactive participants that they would have encountered if they were in a face-to-face forum (Tates et al., 2009).

The reason for using the Adapted Simple ART method with majority vote for the theoretical coding session of the IQA analysis, was that this session was the longest period that the participants would have had to interact with each other, apart from the brief inductive and axial coding sessions. In a face-to-face environment, participants would be interacting with each other from the commencement of the threshold concepts tutorial programme. The purpose of this study promoting this interaction was to provide some sort of interaction and rapport amongst the students, which would have otherwise been absent in an online platform. Another advantage that unexpectedly arose from the Adapted Simple ART method was that participants provided some explanations when justifying why they did not agree with the analysis of a particular affinity pair relationship. As the goodwill of the participants prevailed during the Individual Detailed ART session, this Adapted Simple ART theoretical coding session then also served as practice or pilot session on how to code and to explain the code decided upon. The participants had the opportunity to read their peers' explanations and by the time they started the Individual Detailed ART analysis of the affinity pairs, they had had the time to reflect upon their own responses as well as those of their peers and perhaps amend their perceptions. The explanations in this focus group session, relevant to the Individual Detailed ARTs when using the Pareto Protocol to create the group composite, were also available to use when describing the affinity pair relationships in the next chapter.

Time permitting, the facilitator can draw an IRD and SID so that the focus group participants could respond to their mind map (Northcutt & McCoy, 2004). However, this adapted version of the Simple ART took five hours to complete as it had a little more depth with the unexpected addition of debates and some explanations for the affinity pair relationships, in comparison to merely counting hands in response to each affinity pair relationship. The participants were exhausted by the time the chairperson submitted the last table and as such the session was

closed at 7pm upon receipt of the last table.

7.2.2.2 Individual Detailed ARTs

After a period of time, when the participants were sufficiently rested, they were reminded to complete the individual detailed analysis of the affinity pair relationships if they could, as the study was near completion and that there was just an individual interview to complete prior to the commencement of their online learning programme on 1 June 2020. The ARTs may be completed by each participant or the focus group may be organised into smaller groups, being dyads or triads, groups with two or three participants (Northcutt & McCoy, 2004). As it would have been a challenge to administer each dyad or triad in an online platform, each participant was instead asked to complete an Individual Detailed ART in order to record the analysis of the affinity pair relationships as well to provide an explanation per relationship either in natural language or a 'if, then' hypothesis statement. There were sixteen participants who completed the Individual Detailed ARTs, meaning that sixteen sets of codes from sixteen participants of twenty who had the available time to do so was obtained. The willingness of participants to complete additional unplanned activities in this newly-designed study that had to be conducted using online platforms in a limited time frame, was highly appreciated.

For the Individual Detailed ART, a composite document of eight tables was drawn up (see Annexure 11), like those described for the Adapted Simple ART, with an additional feature, being a space for an explanation of the affinity pair relationship identified. Below is an example of the first (see Table 3) of the eight tables. This table was comprised of three columns, all of which served the same purpose as that of the Simple ART.

Table 3: Individual Detailed ART Table 1

Relationship			Example of the relationship in natural language or 'if, then' statement
1		**2**	
1		**3**	
1		**4**	
1		**5**	
1		**6**	
1		**7**	
1		**8**	

Individual Detailed ARTs are effective as they serve as a continuation of the silent brainstorming process initially conducted (Northcutt & McCoy, 2004). The Individual Detailed ARTs allowed for the maximum collection of data and also provided for a wider variety of explanations. As such the Pareto Protocol was the appropriate method used to complement the detailed explanations provided (Northcutt & McCoy, 2004).

7.2.3 Theoretical Coding Issue 3: Creating a Group Composite

This issue dealt with how a group system will be created. The Democratic Protocol or the Pareto Protocol were the available options and the time at the researcher's disposal dictated which protocol to use. The Democratic Protocol however used the democratic majority vote and should be utilised if the dominant purpose is to generate an affinity list as opposed to conducting an in-depth analysis of the focus group (Northcutt & McCoy, 2004). The Pareto Protocol is a powerful method used to chart the level of consensus within a focus group. This Protocol stated that the "minority of the relationships in any system will account for the majority of the variation within the system". The IQA methodology utilised the Pareto Protocol operationally to reach consensus and utilised this Protocol analytically in order to produce a statistical group synthesis (Northcutt & McCoy, 2004, p. 157).

7.2.3.1 Adapted Simple ART

After the participants had completed the analysis of each affinity pair relationship on the eight tables, the theoretical coding session came to an end as this session took a period of five hours to complete and the participants were exhausted. As such, time did not permit me to ask the participants to review their tables to ensure that they were happy with their analysis, nor did it allow for me to draw a quick IRD and SID for the participants to respond to (Northcutt & McCoy, 2004) based on their analysis. Therefore, the review had to be conducted and the IRD and SID had to be drawn up without the participants, after the completion of the theoretical coding session (see Annexure 12, 13, 14, 15, 16).

The IRD revealed seven ambiguous relationships, being affinity pair relationships that argued for both directions. This meant that these ambiguities had to be analysed in order to determine if any mischievous topologies existed within the system. A mischievous topology implied that there has been a failure to identify a minimum of one affinity between the two identified affinities, implying that the participants identified an indirect affinity pair relationship as a direct one. This ambiguity is resolved in one of two ways. The first way to resolve ambiguous affinity pair relationships was by identifying undetected common influences and undetected feedback loops. Therefore, once these were detected, the relationship was no longer ambiguous as it will then form part of a micro system within the entire macro system. The second way to resolve ambiguous affinity pair relationships was by making use of the interview phase of the IQA process, if the researcher realised that these relationships do not possess undetected common influences or undetected feedback loops (Northcutt & McCoy, 2004). If the Simple ART was applied strictly, then the facilitator will count the number of votes per affinity pair relationship direction in order to determine which direction had the highest frequency, with a tie being determined by analysing the interviews conducted (Northcutt & McCoy, 2004). As the use of the Simple ART was adapted, and the number of votes were not counted, the option to utilise frequency to resolve the ambiguous relationships that arose was not available. However, all of the undetected common influences and undetected feedback loops were identified and therefore all seven relationships identified were no longer ambiguous ones. As such an overall linear view of the Adapted Simple ART was produced.

There was however no intention to use the Adapted Simple ART information to create the group composite with the use of the Pareto Protocol, as the Individual Detailed ARTs were completed and provided a more accurate reflection of all of the participants in the focus group with an explanation per affinity pair relationship. The reasons for conducting the Adapted Simple ART were explained in Theoretical Coding Issue 2: Organising the Focus Group, with the accompanying limitations experienced above.

7.2.3.2 Individual Detailed ARTs

Upon completion of the Individual Detailed ARTs, the Pareto Protocol was used in order to create the group composite and therefore the IRD. A Microsoft Excel spreadsheet was used to create a composite view of all sixteen participants' Individual Detailed ARTs without the explanations (see Annexure 17) in order to allow the efficient tallying of each affinity pair relationship and to then record each frequency in affinity pair order (Northcutt & McCoy, 2004). This process yielded 414 votes from the focus group participants as seen in Table 4 below.

Table 4: Frequency in Affinity Pair Order

Affinity Pair Relationship	Frequency	Affinity Pair Relationship	Frequency	Affinity Pair Relationship	Frequency
1→2	2	2←5	5	4→6	9
1←2	14	2→6	9	4←6	5
1→3	10	2←6	4	4→7	10
1←3	5	2→7	10	4←7	4
1→4	3	2←7	5	4→8	10
1←4	13	2→8	10	4←8	4
1→5	2	2←8	4	5→6	13
1←5	14	3→4	2	5←6	3
1→6	8	3←4	12	5→7	12
1←6	7	3→5	0	5←7	3
1→7	12	3←5	14	5→8	12
1←7	3	3→6	10	5←8	3
1→8	9	3←6	4	6→7	8
1←8	7	3→7	7	6←7	7
2→3	16	3←7	9	6→8	4
2←3	0	3→8	10	6←8	9
2→4	12	3←8	5	7→8	6
2←4	3	4→5	8	7←8	8
2→5	9	4←5	7		
				Total Frequency	414

These affinity pairs are then sorted in descending order of frequency (see Table 5). The next column is the *cumulative frequency*, which was calculated by adding the current frequency of votes for the affinity pair relationship to the total above. The *cumulative percent (relation)* was one of the two factors in the Power Index. It was based on the total number of possible affinity pair relationships, being 414 in this case. Each affinity pair relationship represented 1/414 which equates to 0,24% of the total. The *cumulative percent (frequency)* was based on the total

number of possible affinity pair relationships. This was calculated by adding the current percentage of votes for the affinity pair relationship to the total above. *Power* is an index that was used to determine the degree of optimisation within the IQA system. This was calculated by subtracting the cumulative percent (relation) from the cumulative percent (frequency) (Northcutt & McCoy, 2004).

Table 5: Affinities in Descending Order of Frequency with Pareto Power Analysis

No.	Affinity Pair Relationship	Frequency Sorted (Descending)	Cumulative Frequency	Cumulative Percent (Relation)	Cumulative Percent (Frequency)	Power
1	2→3	16	16	1,786	3,865	2,079
2	1←2	14	30	3,571	7,246	3,675
3	1←5	14	44	5,357	10,628	5,271
4	3←5	14	58	7,143	14,010	6,867
5	1←4	13	71	8,929	17,150	8,221
6	5→6	13	84	10,714	20,290	9,576
7	5→7	12	96	12,500	23,188	10,688
8	1→7	12	108	14,286	26,087	11,801
9	2→4	12	120	16,071	28,986	12,914
10	5→8	12	132	17,857	31,884	14,027
11	3←4	12	144	19,643	34,783	15,140
12	4→7	10	154	21,429	37,198	15,769
13	4→8	10	164	23,214	39,614	16,399
14	1→3	10	174	25,000	42,029	17,029
15	2→7	10	184	26,786	44,444	17,659
16	3→6	10	194	28,571	46,860	18,288
17	3→8	10	204	30,357	49,275	18,918
18	2→8	10	214	32,143	51,691	19,548
19	1→8	9	223	33,929	53,865	19,936
20	2→5	9	232	35,714	56,039	20,324
21	2→6	9	241	37,500	58,213	20,713
22	3←7	9	250	39,286	60,386	21,101
23	4→6	9	259	41,071	62,560	21,489
24	6←8	9	268	42,857	64,734	21,877
25	1→6	8	276	44,643	66,667	22,024
26	4→5	8	284	46,429	68,599	22,170
27	6→7	8	292	48,214	70,531	22,317
28	7←8	8	300	50,000	72,464	22,464
29	1←6	7	307	51,786	74,155	22,369
30	1←8	7	314	53,571	75,845	22,274

31	3→7	7	321	55,357	77,536	22,179
32	4←5	7	328	57,143	79,227	22,084
33	6←7	7	335	58,929	80,918	21,989
34	7→8	6	341	60,714	82,367	21,653
35	1←3	5	346	62,500	83,575	21,075
36	2←5	5	351	64,286	84,783	20,497
37	2←7	5	356	66,071	85,990	19,919
38	3←8	5	361	67,857	87,198	19,341
39	4←6	5	366	69,643	88,406	18,763
40	2←6	4	370	71,429	89,372	17,943
41	2←8	4	374	73,214	90,338	17,124
42	3←6	4	378	75,000	91,304	16,304
43	4←7	4	382	76,786	92,271	15,485
44	4←8	4	386	78,571	93,237	14,665
45	6→8	4	390	80,357	94,203	13,846
46	1→4	3	393	82,143	94,928	12,785
47	1←7	3	396	83,929	95,652	11,724
48	2←4	3	399	85,714	96,377	10,663
49	5←7	3	402	87,500	97,101	9,601
50	5←8	3	405	89,286	97,826	8,540
51	1→2	2	407	91,071	98,309	7,238
52	1→5	2	409	92,857	98,792	5,935
53	3→4	2	411	94,643	99,275	4,633
54	5←8	3	414	96,429	100,000	3,571
55	3→5	0	414	98,214	100,000	1,786
56	2←3	0	414	100,000	100,000	0,000

The MinMax Criterion

The affinity pair relationships that will be included in the group composite IRD are determined by analysing the Cumulative Percent (Frequency) column and the Power column of the table with the affinities in descending order of frequency with Pareto Power analysis. This meant that the cutoff point needed to be determined in order to decide which affinity pair relationships will be included and therefore also excluded. This decision required the optimisation of a trade-off between the maximum variation in the IQA system whilst also minimising the affinity pair relationships for the sake of parsimony (Northcutt & McCoy, 2004).

Accounting for Maximum Variance

The Pareto Principle indicated that of the possible 56 affinity pair relationships, a minimal number of relationships accounted for the majority of the variance. Therefore, the first 12 affinity pair relationships (21,429% of the total) accounted for 37,198% of the total variation in the IQA system and the first 28 affinity pair relationships (50,000% of the total) accounted for 72,464% of the total variation in the IQA system.

Maximum Variance: Frequency

Figure 2 accounted for the variance for each succeeding relationship.

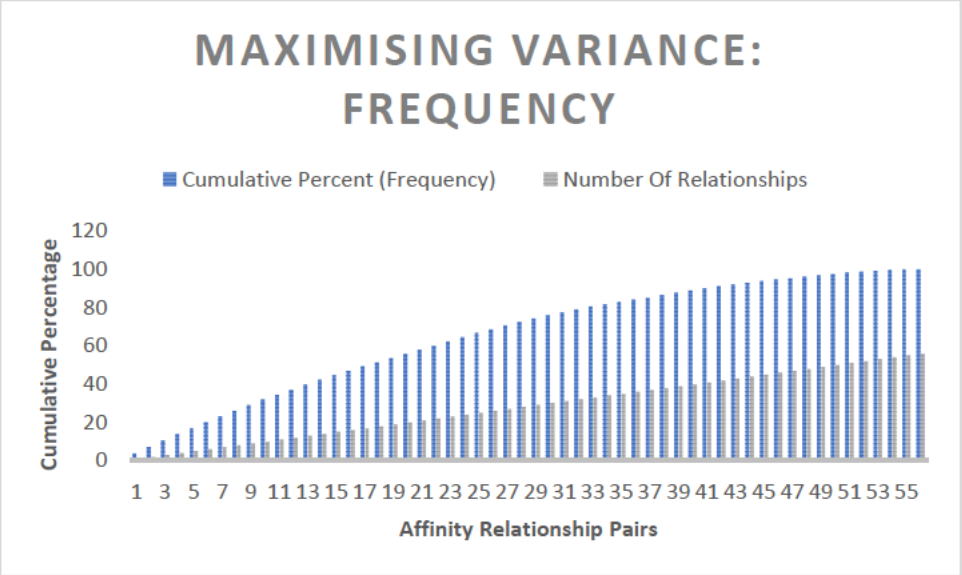

Figure 2: Maximising Variance - Frequency

Minimising the Number of Affinities: Power

Figure 3 illustrated the power analysis for the IQA system. Power was at the maximum at 28 affinity pair relationships, which accounted for 72,464% of the total variation in the IQA system. Therefore, these 28 affinity pair relationships represented an optimal number of affinity pair relationships for inclusion in the group composite IRD as it was in accordance with the MinMax criterion.

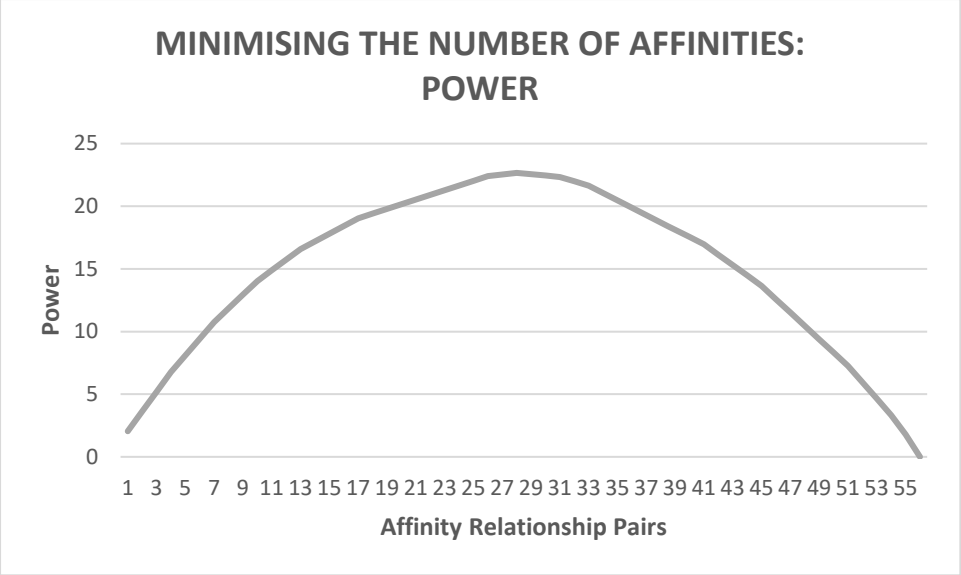

Figure 3: Minimising the Number of Affinities - Power

Creating A Group Composite: The IRD

The data generated from the focus group session was populated in a table consisting of all the affinity pair relationships identified by the group called an Inter Relationship Diagram (IRD) (see Table 6). The researcher used arrows to indicate whether each affinity in the pair is viewed as the driver or outcome or if no relationship existed between the affinity pair (Northcutt & McCoy, 2004). For example, the affinity pair relationship A→B denoted that affinity A influences or drives affinity B, being the influenced or outcome. The IRD utilised arrows that point upwards and point to the left. The pink blocks in the IRD that are blank, indicated that an affinity cannot influence itself. Each affinity pair relationship was treated like a double-entry bookkeeping system as they are recorded twice in the IRD. Therefore, an upwards pointing arrow indicated that row A is influencing or driving column B, using the example with affinity pair relationship A→B, and a left pointing arrow indicated that a column is influencing or driving a row. Each row was then analysed in order to determine the delta (Δ), which was calculated by subtracting the number of left arrows from the number of up arrows. After each row was analysed, the IRD was then arranged in descending order of delta determined (see Table 7) (Northcutt & McCoy, 2004).

Table 6: Tabular IRD

	1	2	3	4	5	6	7	8	Out ↑	In ←	Δ
1		←	↑	←	←	↑	↑	↑	4	3	1
2	↑		↑	↑	↑	↑	↑	↑	7	0	7
3	←	←		←	←	↑	←	↑	2	5	-3
4	↑	←	↑		↑	↑	↑	↑	6	1	5
5	↑	←	↑	←		↑	↑	↑	5	2	3
6	←	←	←	←	←		↑	←	1	6	-5
7	←	←	↑	←	←	←		←	1	6	-5
8	←	←	←	←	←	↑	↑		2	5	-3

Table 7: Tabular IRD - Sorted in Descending Order of Δ

	1	2	3	4	5	6	7	8	Out ↑	In ←	Δ
2	↑		↑	↑	↑	↑	↑	↑	7	0	7
4	↑	←	↑		↑	↑	↑	↑	6	1	5
5	↑	←	↑	←		↑	↑	↑	5	2	3
1		←	↑	←	←	↑	↑	↑	4	3	1
3	←	←		←	←	↑	←	↑	2	5	-3
8	←	←	←	←	←	↑	↑		2	5	-3
6	←	←	←	←	←		↑	←	1	6	-5
7	←	←	↑	←	←	←		←	1	6	-5

The purpose of the IRD was to determine which affinities were drivers and which affinities were outcomes by using the delta values (see Table 8). Affinities with positive deltas are called relative drivers, whilst affinities with negative deltas are called relative outcomes. A means of understanding elements and the relationships between these elements was by describing elements as drivers and outcomes. A driver is a cause or an influencer with more arrows going "out" rather than "in", with the opposite being true for an outcome. Drivers and outcomes can further be classified as primary and secondary, with primary drivers having all arrows going "out" and none going "in" with the opposite being true for a primary outcome. Secondary drivers have more arrows going "out" rather than "in", with the opposite being true for secondary outcomes (Northcutt & McCoy, 2004, p. 32).

Table 8: Tentative SID Assignments

Tentative SID Assignments		
2	Adopting a Holistic Approach to Learning	Primary Driver
4	Demystified Threshold Concepts Infused Materials	Secondary Driver
5	Learning Challenges	Secondary Driver
1	Learning Experiences	Secondary Driver
3	Various Learning Outcomes	Secondary Outcome
8	Learning Attributes	Secondary Outcome
6	Emotional Responses	Primary Outcome
7	Perceptions	Primary Outcome

Focus Group Systems Influence Diagram

The affinity pair relationships populated in the IRD were then used to create a visual representation of a system of drivers and outcomes called a SID. The system's affinities were presented from left to right commencing with drivers and concluding with outcomes. The primary drivers were presented on the extreme left with the primary outcomes being presented on the extreme right. Secondary drivers and secondary outcomes were placed in between the primary drivers and outcomes, with the secondary drivers being on the left and the secondary drivers being on the right (Northcutt & McCoy, 2004). The Cluttered SID (see Figure 4) consisted of all relationships within the IRD, making this diagram a very comprehensive one, with limited explanatory value.

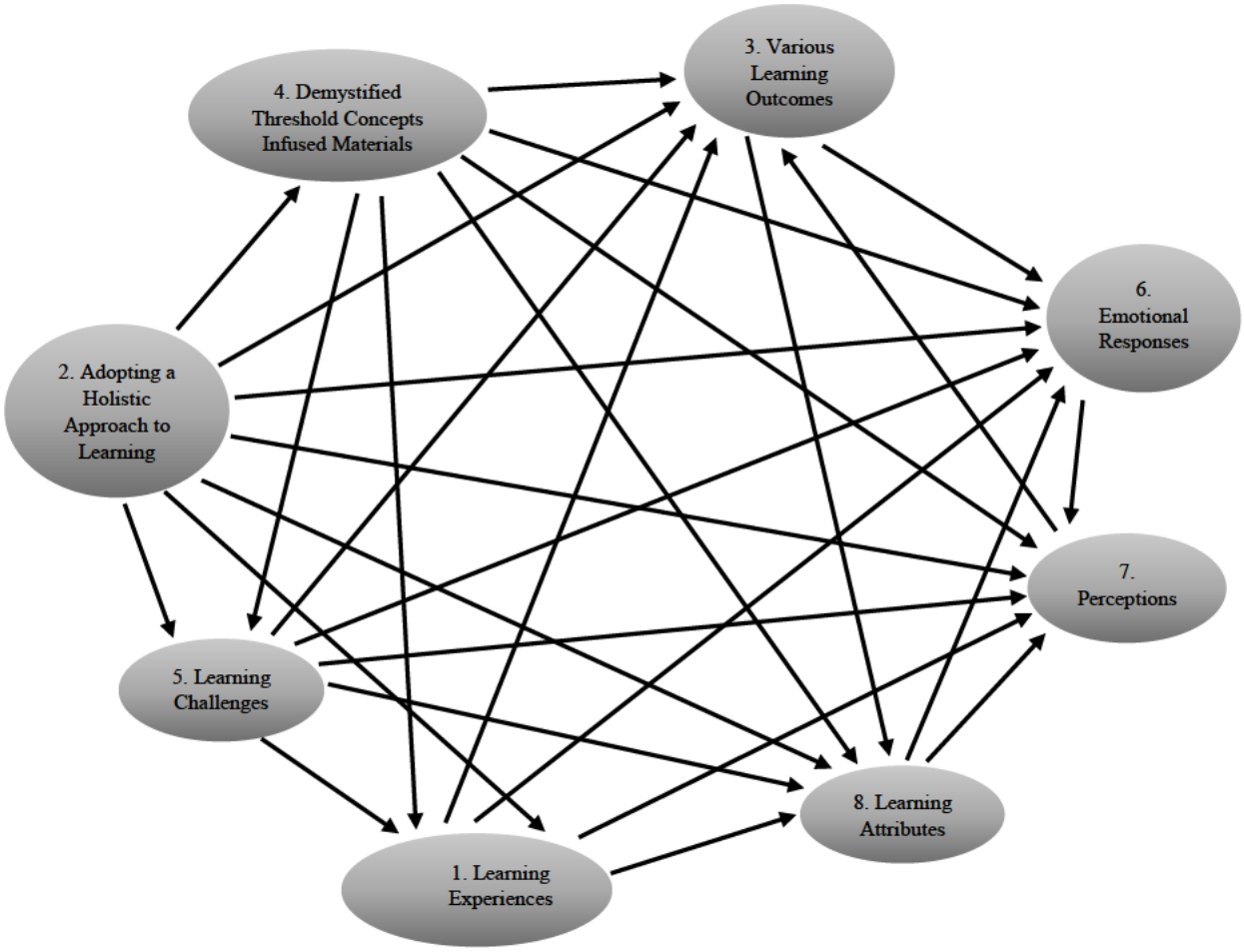

Figure 4: Cluttered SID

The Uncluttered SID (see Figure 5) had all redundant relationships removed, allowing for easier interpretation (Northcutt & McCoy, 2004). An analysis from highest positive delta to highest negative delta was conducted. If there was a path between these two deltas, then the direct link may be removed. This process continued until all redundant links were removed, allowing the researcher to draw a Clean SID or Telephoto View SID.

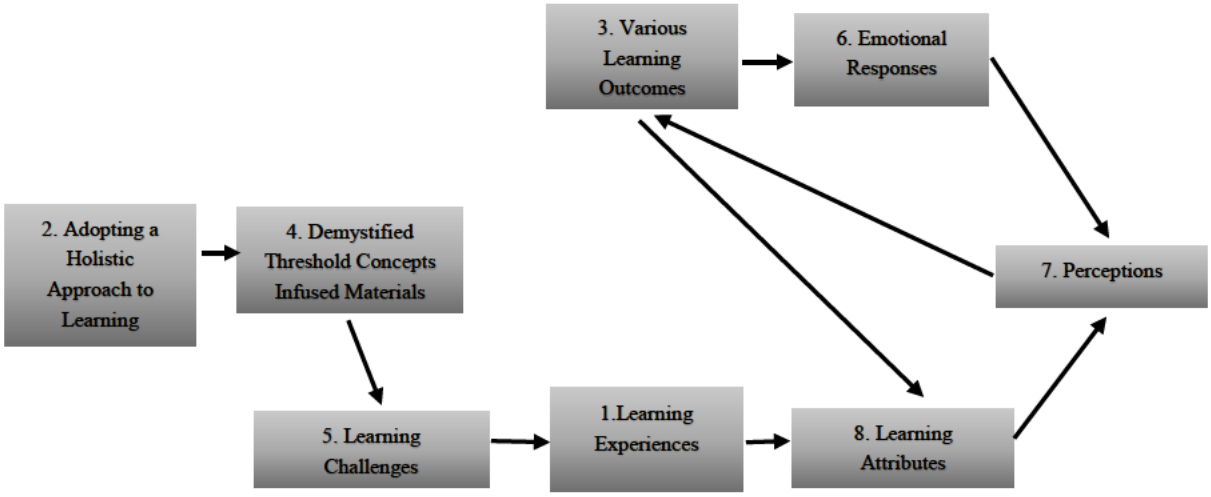

Figure 5: Uncluttered SID

A Tour Through the System

The Uncluttered SID in Figure 5 provided the following interpretation of the study with the participants: The holistic approach to learning adopted by the participants influenced how effectively they interacted with the Accounting 101 threshold concepts tutorial questions. The design of these demystified threshold concepts infused materials, the tutorial questions, also influenced the challenging dynamics of the discipline content. The learning challenges found within the discipline content influenced the learning experiences of the participants and in turn also influenced the learning attributes the participants discovered about themselves from this process. The learning attributes possessed also influenced the way in which the participants perceived themselves and the discipline, which in turn influenced them to acquire the various learning outcomes with more confidence. The acquisition of these various learning outcomes resulted in further learning attributes being acquired. This three-affinity micro system was representative of a feedback loop within the entire macro system. The perception participants possessed of themselves and the discipline, after acquiring further learning attributes, had the effect of influencing the various learning outcomes that they acquired. These various learning outcomes also had the effect of influencing the way the participants responded emotionally towards the discipline as well as the way they perceived themselves and the discipline throughout the study. This three-affinity micro system was representative of another feedback loop within the entire macro system.

Epistemological Acrobatics: Zooming In, Zooming Out, and Looping

'Zooming in' involved the researcher focusing on one of the elements in the system and recognising a micro system within that particular element. 'Zooming out', however involved the researcher recognising that this micro system was one of the elements within a larger macro system (Northcutt & McCoy, 2004). 'Looping' are the recursions that provided the researcher with the means to understand the complicated dynamics within the system, made up of at least three affinities, that were representative of conventional social systems (Northcutt & McCoy, 2004). The two sets of micro systems or feedback loops identified for this study were as follows:

- Learning Attributes, Perceptions, Various Learning Outcomes, and
- Perceptions, Various Learning Outcomes, Emotional Responses

The name assigned to these micro systems was determined by analysing the axial coding session and affinity descriptions provided. The affinities of the first micro system suggested the name ‘talented’, which referred to the conceptual troublesomeness. The affinities of the second micro system suggested the name ‘enjoyment’, which referred to the emotional troublesomeness. These ‘superaffinties’ will substitute the feedback loops as one of the elements within the larger macro system.

2 – 4 – 5 – 1 – (8 – 7 – 3 – 8) – (7 – 3 – 6 – 7)

Figure 6: Telephoto View SID

The Clean SID or the Telephoto View SID (see Figure 6), was the Uncluttered SID version showing the redundant relationships in a devalued colour (Northcutt & McCoy, 2004). This Telephoto View SID (Northcutt & McCoy, 2004) was the same as the Uncluttered SID except that it incorporated the feedback loops identified and cannot be zoomed out further and therefore resulted in an overall linear view.

7.3 Individual Reality: IQA Interview

7.3.1 Overview

The IQA interview is directed by the affinities identified in the focus group session as a second set of data collection. The first phase of the interview is called the axial interview and this involved the researcher asking the individual participants what each affinity meant to them as well as to provide their experiences with each affinity (Northcutt & McCoy, 2004). The second phase of the interview is called the theoretical interview and this involved the researcher asking the individual participants to provide an analysis of the relationships that they perceived to be between the affinities (Northcutt & McCoy, 2004).

7.3.2 Telephonic Interviews Used During COVID-19

Qualitative research has employed the use of interviewing as the most generally accepted means of data collection (Creswell & Creswell, 2017). Traditionally this means of interviewing was conducted primarily in a face-to-face environment. This environment has inherent strengths, mainly being that the interviewer can control the environment by using personal interaction (Holbrook et al., 2003; Szolnoki & Hoffmann, 2013). Telephonic interviews were less appealing to use in qualitative research as the visual cues that would be utilised by the interviewer when personally interacting with the participant in a face-to-face environment was absent. However, some research studies have shown that participants are relaxed and more amenable to divulging sensitive information and that there was not enough evidence to support the claim that telephonic interviews generated data of a lower quality (Novick, 2008). Prior studies have on the other hand, shown that participants have felt uncomfortable when divulging sensitive information via the telephone (Groves, 1979). Some benefits when using telephonic interviews are the lower cost and time, safety of participants, for example in high crime regions, and where prior contact has been made with the participants in small-scale qualitative studies (Carr & Worth, 2001). When designing this study using online platforms, the participants indicated that the use of WhatsApp Messenger would be the most cost-effective platform. The WhatsApp Messenger calling function was used to call participants in order to conduct the interview phase of the IQA methodology. Other studies have implemented the use of Skype for their interviews (Janghorban et al., 2014), but this option was not as cost-effective to the participants as they had cellular telephone data constraints. Some participants opted to use their night time cellular telephone data, so some of the interviews were conducted in the evening, with one participant who had requested his interview to be scheduled at midnight. As this study was conducted during a pandemic, the utilisation of a telephonic interview ensured the safety of the participants as this telephonic platform eliminated the need for face-to-face interaction. As the interview was the final part of the study, a rapport had already been established with the participants. This rapport provided a level of assurance in the absence of visual cues.

7.3.3 Preparing for the Interview

As the interviews were conducted using the WhatsApp Messenger calling feature, this logistical set-up involved conducting an equipment check of all the devices used to conduct the interview as well as record the interview. I used my laptop to read the interview questions from and had a separate Microsoft Word document with the ART and space below to make notes on, that were projected onto the television in the room I conducted the interviews. I decided to complete the ART so as to make the process convenient for the participant. I also had a printed copy of the interview questions, ARTs and a notebook with stationery in case any laptop and television issues were encountered. I also used the Voice Recorder function on my previous cellular telephone to record the interview, as I used the loudspeaker function on my current cellular telephone to call the participants using the WhatsApp Messenger calling feature. I had tested the clarity of the conversation by recording a conversation prior to the interviews being conducted. I also had to use an HDMI cable to allow for connection from the laptop to the television, and a multiplug adapter to accommodate the charging cables of these three devices. The purpose of conducting these equipment checks and having printed backup documentation, a notebook and stationery, was to not waste time in the event of an unforeseen circumstance, but to rather interact as productively as possible with the participant (Northcutt & McCoy, 2004).

7.3.4 IQA Interview To-Do's

Upon calling the participant from my cellular telephone using the WhatsApp Messenger calling feature, I commenced by creating a comfortable environment for the participant by firstly asking them general information about themselves relevant to the study. A newly planned set of general, introductory questions for the participants to answer at the beginning of the conversation before moving to the axial and theoretical sections of the interview were asked (see Annexure 18). These general, introductory questions were relevant to the newly-designed online platform used in the study: the emotional impact the lockdown had on the participants, the data, the service providers, the device used, the learning environment and their perceptions of Accounting 101 and the threshold concepts tutorial programme upon completion of the study. Once the participant felt comfortable enough to divulge this general information (Northcutt & McCoy, 2004) and anything else they may have wanted to add about themselves, we then proceeded to the next phase of the interview as this general information promoted a

better rapport with the participant.

Prior to commencing with the axial phase of the interview, a picture of a table of the eight affinities identified in the focus group session was sent to each participant. Each participant was then asked to look at each theme listed on the table and to share their experiences of each one. The word theme, and not affinity, was used throughout the interview, as I wanted to use terminology familiar to the participants. Once this phase was completed, we proceeded to the theoretical phase of the interview.

For this phase the participants were told that some of the themes generated in the focus group session have a relationship. The participants were then asked to indicate which themes they had identified as having a relationship with another theme, and to then provide an example of their learning experiences of Accounting 101 for each causal relationship that they had identified (Northcutt & McCoy, 2004). The purpose of this follow-up interview in the IQA process, was to provide a richer portrayal of the phenomenon under review in addition to that of the focus group session conducted prior to this phase. Therefore, Phase One of the IQA process, being the focus group session, and Phase Two of the IQA process, being the interview session, were parallel in nature (Northcutt & McCoy, 2004). It was noticed that the responses for the theoretical phase were very limited. This meant that the blank ARTs prepared for each participant were not even used, as the participants listed just a few relationships in the telephonic interview, even after being reminded about the tables that they had completed. I presumed that the goodwill of the students regarding the affinity pair relationships and explanations had been exhausted, as they had completed the Individual Detailed ARTs, and I did not want to push the participants any further. These affinity pair relationship explanations are also included in the next chapter.

7.4 Conclusion

This chapter detailed the outcomes of the IQA methodology. Phase One of the IQA methodology created a SID, a mind map representative of the group reality regarding the phenomenon outlined in the issue statements. Phase Two of the IQA methodology involved conducting a two-phased interview, representative of the individual reality, that generated a second set of data in order to validate the end product of Phase One. The next two chapters

continues with the IQA methodology process by analysing the affinity pair relationships identified by the participants.

CHAPTER EIGHT

ANALYSIS OF THE AFFINITY PAIR RELATIONSHIPS: DRIVERS

8.1 Introduction

The purpose of this chapter was to perform an analysis of the explanations provided by the participants for each affinity pair relationship identified, using the Pareto Protocol and Power. The number of affinity pair relationships to be included in the group IRD was determined by identifying when power reached its maximum point. The group IRD was then sorted in descending order of delta. The purpose of sorting the IRD in descending order was to provide the data necessary in order to determine which affinities were drivers and outcomes, both of which were further classified as primary and secondary.

The structure of this chapter and the next follow that of the Tabular IRD sorted in descending order of delta commencing with the drivers, being primary and secondary in nature, followed by the outcomes in the next chapter, being secondary and primary in nature. For each of these classifications, the relevant extract from the Tabular IRD sorted in descending order of delta as well as the relevant extract from the Cluttered SID was inserted.

The explanations provided by the participants for each affinity pair relationship have been taken from the Adapted Simple ART WhatsApp Messenger group chat, the Individual Detailed ARTs and the theoretical coding aspect of the individual interviews. The analysis of the explanations relevant to the drivers were presented in this chapter.

8.2 Primary Driver

8.2.1 Adopting a Holistic Approach to Learning

Table 9: Adopting a Holistic Approach to Learning - Extract of Tabular IRD Sorted in Descending Order of Δ

	1	2	3	4	5	6	7	8	Out ↑	In ←	Δ
2	↑		↑	↑	↑	↑	↑	↑	7	0	7

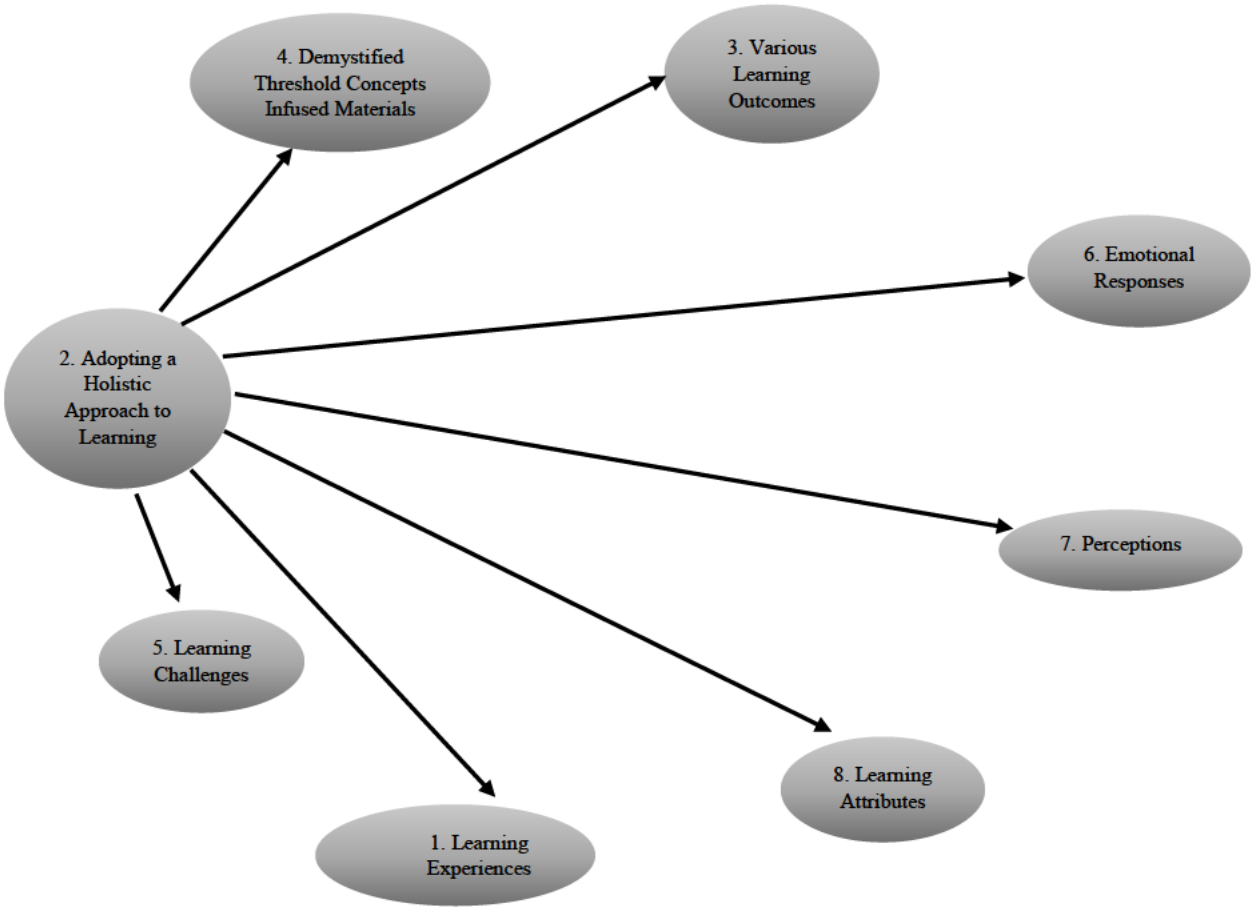

Figure 7: Adopting a Holistic Approach to Learning - Extract of Cluttered SID

8.2.1.1 Learning Experiences (2→1)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 9) and Figure 7, the participants' experiences of how adopting a holistic approach to learning influenced the learning experiences were described. Participants understood that the holistic approach that they adopted to learning when approaching the tutorial questions provided, would influence their overall understanding of the threshold concepts. Therefore, they realised that if their holistic approach to learning was an effective one, they were then able to understand the threshold concepts and apply them to the tutorial questions easily, allowing them to experience positive learning experiences. Other participants also identified that a good holistic approach to learning would result in them having a fantastic learning experience as they would gain positively from this. They were determined not to adopt weak approaches as they knew that this would have a negative effect on their learning experiences. Participants described the holistic approaches adopted to learning that they felt had a positive effect for them when attempting the tutorial questions.

Participants indicated that their method was to firstly read the tutorial question and requirements of the question before attempting them, and that if they did not understand the question or what was required from the question, they referred to the textbook or me for direction when researching the particular topic. This prior research provided the participants with a deeper understanding and broader context of the knowledge, thus allowing them to attempt the question and requirements appropriately, as opposed to approaching the question hastily and with a superficial level of understanding and knowledge. Other participants indicated that once they had a good understanding of the threshold concepts, they then constantly referred to these concepts in order to provide them with a more effective learning experience. One of the participants indicated that writing down the solution in as much detail as possible was a method that helped him to identify their knowledge and the gaps thereof, and he therefore found this useful to assist him to rectify the errors made or detail omitted. Participants indicated that their level of confidence was key when approaching a tutorial question. This meant that they elected to attempt the questions or parts of the question that they felt they were good at first, in order to develop a positive attitude before attempting the questions or parts of a question that they deemed to be challenging. Once their holistic approach to learning was determined and they felt it was successful, they were more willing to attempt further tutorial questions, and their learning experience became a more positive one. This in

turn meant that when participants were faced with difficult tutorial questions, their confidence in their holistic approach to learning prevailed, as their approach allowed them to understand the threshold concepts being tested and therefore resulted in a much better learning experience. Participants who did not have a holistic approach to learning in the beginning realised that 'winging it' was not a viable option. As such when they realised that they had to become more organised and that they needed to develop an actual approach in order to attempt the tutorial questions, their learning experiences became more beneficial to them. Participants who had the approach of immediately attempting the tutorial questions, realised that their learning experience was very negative and had to be amended as they needed to grasp the threshold concepts first in order to have the knowledge to attempt the tutorial questions. This approach left the participants with a better attitude and hence better learning experiences. Below are descriptions provided by the participants for the relationship between adopting a holistic approach to learning and learning experiences.

- *Writing each example helps me to understand it better.*
- *Activity 1 involved the accounting equation and T-accounts. I found it difficult but the method I used allowed me to understand and better my experience.*
- *The method I used when I did questions on the accounting equation where I had the accounting concepts and constantly referred to them and allowed me to understand it and enhanced my learning experience.*
- *Depending on how I approached the tutorial e.g. it would influence my overall understanding of the tutorial.*
- *When attempting a set of questions students tend to do questions that they are quite good at because they know how to approach that type of questions. In activity 1, we dealt with the accounting equation and t-accounts which for me was a bit confusing but the method that I picked up help me improve; this gave me a positive learning experience towards other aspects of accounting.*
- *The method of approach influenced the learning experience because the method of approach to the study was based on understanding the concept, therefore influencing the learning experience as I have found the method of approach very helpful.*
- *If the method of approach is good, then the learning experience is fantastic.*
- *During the program, I discovered that the method of approach I chose to learn accounting influenced the experience I had, a successful method would influence a good*

experience.

- *With the accounting program, I learnt that your method of approach influences your learning experience. If you have an effective approach method towards your work, you are able to understand and apply the work easier, which will result in a positive learning experience, as opposed to a weak method of approach.*
- *If I have approached the tutorial in a good way, then I will gain much learning experience.*
- *Once I got my method of approach, it made me more confident in my learning experience.*
- *I didn't really have a method of approach at first, I was just winging it but that wasn't working and to change it. I had to become more organised with help me benefit more in learning overall.*
- *I was optimistic about the whole experience. It was my first semester, so I was excited.*
- *The approach we take towards tackling accounting would impact our experience. e.g. if I thought the best way was just reading the textbook, I would find things difficult. However, another student who actually practices examples would find it easier.*
- *My original method of approach was to start with examples and activities and my learning experiences was more negative as opposed to now. I found that when I changed my method of approach and grasped the concepts first then tried out the work, I had a much better attitude towards accounting.*
- *I read the tutorials then attempt, if I didn't understand then I went to the textbook or consulted with you, by doing that I had a good learning experience and understand accounting better.*
- *My approach of attempting the questions properly, instead of rushing improves the learning experience.*
- *All the work I did including research etc. assisted in making the experience better. I understood more and had more knowledge.*
- *My method of approach helped with my learning experience. How I approached the work, reading the textbook etc, helped when doing the tutorials, it was a positive learning experience.*

8.2.1.2 Various Learning Outcomes (2→3)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 9) and Figure 7, the participants' experiences of how adopting a holistic approach to learning influenced the various learning outcomes were described. Participants understood that how they approached the tutorial questions determined the end result of their learning journey, the various learning outcomes. They were cognisant of the fact if their holistic approach to learning was poor, then this would be disastrous as their various learning outcomes too, would be a poor. Participants described the holistic approach to learning that they utilised in order to enhance their various learning outcomes as they were determined to leave the tutorial programme with positive various learning outcomes.

Participants indicated that their plan of action when approaching the tutorial questions, determined how much they actually learned. They realised that they needed to focus on the relevant topic by spending the necessary time engaging with the lecture content so that they could strengthen their knowledge before attempting the tutorial question. This pre-reading of a topic allowed them to not only learn, but more importantly, to understand the threshold concepts of the discipline. This understanding of the threshold concepts allowed the participants to feel confident enough to therefore apply this understanding to the tutorial questions provided, resulting in them acquiring successful various learning outcomes that they could apply to their chosen degree and to their life. As these threshold concepts were newly acquired, participants were able to constantly refer to the threshold concepts learned, so as to provide them with a better understanding when attempting further tutorial questions. One of the participants indicated that writing the solution in as much detail as possible, allowed him to identify his mistakes and rectify them and this therefore impacted on the outcomes of his learning and the maximisation of the marks scored in the discipline.

Participants indicated that if they needed to, they adjusted their holistic approach to learning. Once they adopted the appropriate approach needed, this resulted in an improved understanding of the threshold concepts being learned and they then applied this approach to each topic that they had to learn going forward. They realised that if they strictly adhered to the appropriate approach adopted, then this would in turn strongly contribute to the various learning outcomes gained from the tutorial programme. Participants also acknowledged that if they if they did not strictly adhere to the appropriate methods, then they would not have experienced the same

various learning outcomes. They used their newly adopted holistic approach to learning to *work smarter and not harder*, the philosophy I had explained at the beginning of the programme, and had started to look for the easiest and most effective approach to the tutorial questions, which allowed them to improve the various learning outcomes of the tutorial. As the tutorial programme progressed, and the participants encountered learning challenges, they indicated that they were more determined to overcome these learning challenges as they realised that they learned more by focusing on how to overcome these in order to acquire the various learning outcomes. Below are descriptions provided by the participants for the relationship between their newly adopted holistic approach to learning and the various learning outcomes.

- *Doing tutorials and practising more made me get good grades on my accounting exams.*
- *Writing it down affects how my results are produced.*
- *When I use a method that I know will help me such a referring to basic concepts constantly, it will ensure I understand the work therefore prove a good learning outcome.*
- *By doing pre-reading from lecturers - it did help my understanding of Accounting 101.*
- *As I adjusted the method, I found that my understanding of the concepts was improving incrementally.*
- *They plan of action I went about affected how much I learnt.*
- *When approaching a question, students tend to look for the easiest possible solution, by doing this it improves the outcomes of the tutorial.*
- *The method of approach influences the learning outcome because I have found the method of approach being to understand the concept and apply that to examples which influenced my learning outcome, making my learning outcome successful, as I have learnt many helpful techniques that I can apply to my degree and life.*
- *The learning outcome relies heavily on the method of approach. If the method of approach is poor, the learning outcome will be a disaster.*
- *If a successful method of approach is used, then the learning outcome would be a successful one as I would have understood each concept learnt.*
- *For me, my method of approach influenced my learning outcomes. With my effective method of approach to tackling the tutorials, it resulted in positive learning outcomes when it came to learning and understanding the concepts of accounting.*
- *How I approached the tutorial will determine the end results.*

- *Once I found an appropriate method of approach it helped me to learn each topic in the same way.*
- *My method of approach contributed to my learning outcome as it helped to work smarter not harder.*
- *Taking the time to go over everything and being focused helped in strengthen my knowledge.*
- *The challenge I experienced with bank recon will cause my learning outcome to be higher because I learnt more. I was more focused to overcome the challenge.*
- *How you approach something will affect your overall outcomes of your learning.*
- *Due to the method of approach and keeping with those methods - it strongly contributed to my learning outcomes. If I didn't stick to the methods, I wouldn't have had the same outcomes.*
- *My method of approach would affect my learning outcome. It was a positive learning outcome.*

8.2.1.3 Demystified Threshold Concepts Infused Materials (2→4)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 9) and Figure 7, the participants' experiences of how adopting a holistic approach to learning influenced the demystified Threshold Concepts infused materials were described. Participants understood that how they approached the tutorial questions determined how effective the demystified threshold concepts infused materials were for them. If they adopted the correct holistic approach to learning, then this would allow them to understand and learn the threshold concepts, making the tutorial questions effective. Participants indicated that their adopted holistic approach to learning was to engage with all lecture content of the topic being tested, being the slides provided and the textbook as well as the tutorial question to the best of their ability in order to receive the full benefits of each tutorial question provided. For the more challenging topics, participants felt free to consult with me so that I could further break down the topic into steps for them to follow as they adhered to the requirements of each tutorial question quite strictly, in order to achieve their goal of maximising how much they learned and therefore seeing the threshold concepts tutorial questions to be as effective as they possibly could be. Below are descriptions provided by the participants for the relationship between their newly adopted holistic approach to learning and demystified threshold concepts infused materials.

- *How productive my tutorials [were] depended on how I work towards my goal.*
- *My study method allowed the tutorial to be effective.*
- *The method I use when doing tutorials determine the effectiveness of the tutorial - if the method I use helps me understand the work.*
- *Reading slides and textbook helped me understand the tut and the Accounting module as a whole.*
- *If the tutorial was one of the tougher sections I asked for help to break it down.*
- *If the tutorial is effective, then the learning experience is also effective then the method of approach will follow the tutorial instructions well.*
- *If you pick a method that is familiar to you, it will increase the effectiveness of the task.*
- *The method of approach influences the effectiveness of the tutorial because I found that the tutorial was effective due to the method of approach being to understand the concept making the tutorial easier to understand.*
- *If the right method of approach is used, then the tutorial would be more effective as I would have been able to have learnt and understood more.*
- *How I approached the tutorial can determine how effective the tutorial was for me.*
- *Once I had my method of approach correct, I could understand the tutorial better which means it was more effective.*
- *If I attempt everything and cover all aspects of the topics, the tutorial will be more effective.*
- *My approach influences how effective the tutorial was, including how much I learnt and how much I knew.*
- *I decided to approach accounting by attempting all tutorial questions and helped make the tutorial more effective.*
- *My method of approach will determine if I learn from the tutorial and if it was effective for me.*

8.2.1.4 Learning Challenges (2→5)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 9) and Figure 7, the participants' experiences of how adopting a holistic approach to learning influenced the learning challenges were described. Participants understood that the holistic approach to learning adopted would either introduce challenges to learning or limit them. They also realised that if they

selected a newly adopted holistic approach to learning that was either poor or difficult for them to understand, then they would encounter many challenges in their learning journey. In addition, they also realised that if the approach selected or suggested could not assist them to understand the tutorial question, then they would encounter further challenges to their learning journey. Participants also admitted that if they cheated when attempting a tutorial question, then this would be to their detriment as they would never be able to fully understand the threshold concepts of the tutorial questions and that this would also impose additional challenges to their learning. Therefore, the selection of a good newly adopted holistic approach to learning was essential to assisting them to either reduce the learning challenges faced substantially or to overcome the learning challenges that they faced in the tutorial programme completely, allowing them to be able to answer any tutorial question that they were presented with.

The approach used by participants was to engage with the lecture content for each tutorial question provided in order for them to find the tutorial questions less challenging when they attempted them. The threshold concepts explanations provided in the tutorial solutions allowed the participants to understand the threshold concepts in more detail and therefore identify the mistakes made so that they could overcome the learning challenges encountered. Participants felt that this newly adopted holistic approach to learning made it easier to understand the threshold concepts and provided them with an approach to use in their chosen degree when confronted with learning challenges in other disciplines.

One of the participants decided that their holistic approach to learning at the commencement of the programme was to “wing it”. However, this method did not work for her and as such she had to find an approach that worked for her based on engaging with the design of the earlier tutorial questions. This new approach adopted allowed her to overcome the learning challenges encountered. Another participant indicated that he experienced the learning challenges of managing his studies with his responsibilities at home and therefore it was imperative that his newly adopted holistic approach to learning had to be effective in order for him to reduce or eliminate the learning challenges of studying Accounting 101. Below are descriptions provided by the participants for the relationship between the newly adopted holistic approach to learning and learning challenges.

- *The method of learning has brought my challenges and mistakes I've faced.*
- *My study method has brought the challenges I had to go through.*
- *If the method used does not help me understand the tutorial, it will make the tutorial more challenging.*
- *If you pick a method that leads that is hard and which you don't even understand, you will run into endless problems.*
- *The method of approach influences the challenges because I found that the method of approach helped me with my challenges, making the tutorials easier to understand, and assisting mw with a solution to carry throughout my degree.*
- *If the method of approach is good, then surely the student will be able to overcome the challenges. So, the method of approach is essential.*
- *If I approached It tutorial poorly, then I will encounter many challenges.*
- *If my method of approach was right it became less challenging to me.*
- *The challenges such as juggling schools, life and home life as well as the distractions were factors I had to look into minimising and try to stay focused.*
- *At first, I didn't know what I was doing, I was winging it, but I later got a system going to help me overcome most of the challenges.*
- *By attending my lectures and using the notes, when I was attempting my tutorial, I found it less challenging.*
- *I think your method of approach would determine your challenges throughout.*
- *As a more educated approach with referencing from the book for example would reduce any difficulties.*
- *My method of approach will reduce my challenges. I'm able to answer any question.*
- *My method of approach did help me with the challenges of accounting. It helped me overcome and understand concepts.*
- *Your method of approach will determine whether you will experience challenges or not. If you have a good approach, you will not experience as much challenges versus if your method of approach is bad.*
- *If you cheat on a question, you will only experience more challenges. You will not fully understand the question.*
- *Whatever method of approach you choose will either introduce your challenges or limit them.*

8.2.1.5 Emotional Responses (2→6)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 9) and Figure 7, the participants' experiences of how adopting a holistic approach to learning influenced the emotional responses were described. Participants understood that the newly adopted holistic approach to learning that they selected determined how they felt about the discipline of Accounting 101. They also realised that the biased preconceptions of the discipline that they possessed caused them to experience strong emotional responses to the discipline, regardless of whether those preconceptions were positive or negative. The emotional responses of the participants during the tutorial programme were also mixed in nature, as one of the participants indicated that she felt glad if the newly adopted holistic approach to learning was successful, and unhappy and confused if her newly adopted holistic approach to learning was unsuccessful. Participants' confusion was eliminated once they adopted a holistic approach to learning that they found to be fun and informative, which ultimately caused them to alter their perception for that particular topic and therefore feel more confident when performing the tutorial questions provided. If participants chose a newly adopted holistic approach to learning that was familiar to them, this made it more enjoyable for them and therefore the benefit of this method was that it allowed the participants to feel more confident and experience a successful learning journey. This meant that the emotional responses the participants had regarding the tutorials will be a positive one as the newly adopted holistic approach to learning was also a positive one that participants felt they could utilise in the rest of their chosen degree. Below are descriptions provided by the participants for the relationship between the newly adopted holistic approach to learning and emotional responses.

- *My method of learning affects how I felt this module overall.*
- *My study methods have influenced how I felt the module.*
- *If I use a method that is familiar to me and enjoyable it will allow me to feel more confident when doing the tutorial.*
- *The method whether successful or not, had an effect on my emotions; if it was a success then I was glad; if it failed, I was unhappy and confused.*
- *If you pick a method which is fun and informative it will alter your mindset to that sections or tut.*
- *The method of approach influences my emotional opinion because I found the method of approach beneficial, and I am going to carry it throughout my degree.*

- *If you choose the right method, you will be able to learn more successfully causing you to feel good emotions towards the tutorial.*
- *If I approached the tutorial with a biased mind, then I will have a strong emotional opinion on the concepts.*
- *Once I knew how to approach the topic, I felt more confident to do the activities.*
- *My method of approach makes me feel more confident.*

8.2.1.6 Perceptions (2→7)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 9) and Figure 7, the participants' experiences of how adopting a holistic approach to learning influenced the perceptions were described. The participants understood that their newly adopted holistic approach to learning would determine how easy or how difficult the discipline would be for them. They also realised that if their newly adopted holistic approach to learning was poor, then they may never be able to understand the threshold concepts of the discipline. They were careful when considering the newly adopted holistic approach to learning.

One of the participants indicated that their approach of writing down his answers allowed him to fully identify the gaps in his knowledge as he had a comprehensive written solution that he could use to analyse his progress and therefore rectify his mistakes or learn what was missing from his understanding of the threshold concepts. This approach made the participant feel more confident about constructively engaging with his written attempts and to fully understand the discipline content. Participants indicated that their newly adopted holistic approach to learning, was to attempt the tutorial questions that they found to be easy to understand first. They found that this approach allowed them to have a clearer mind when approaching the difficult questions thereafter, as they had acquired the confidence and positive mindset to attempt these difficult questions. They who chose an easily understandable newly adopted holistic approach to learning felt that this was beneficial to their perception of the challenging topics that they encountered. This approach gave the participants the confidence to no longer by-pass the challenging topics when in an examination situation, but to rather confront them.

Participants understood that their chosen holistic approach to learning would be able to assist them to understand the threshold concepts and therefore allowed them to apply the threshold concepts to their learning by using this newly adopted holistic approach to learning. This method had the effect of influencing the participants' perception of the threshold concepts, which ultimately changed the way in which they understood their work. They further understood that if they adopted the appropriate holistic approach to learning, that they would be able to easily understand the threshold concepts being tested, and therefore their perception of the tutorial programme and Accounting 101 as a whole would be positive. Participants who were fully confident that their newly adopted holistic approach to learning was correct, found that their perception of the discipline was that it was much easier, as they were very confident about the method that they implemented. Below are descriptions provided by the participants for the relationship between the newly adopted holistic approach to learning and perceptions.

- *My learning techniques affects how easy or hard this module was for me.*
- *My study method of writing examples down made me feel more sure about myself.*
- *When doing a tutorial, I do the questions I understand first and leave the hard questions last because it will allow me to approach the hard questions with different perspective as I have done questions I know and have clearer mind then I would have if I attempted the hard questions first.*
- *For example, in an exam you come across a certain section in the paper and instantly skip for the end cause you don't understand it, by picking a method of approach which is easily understandable which will change your perception towards that section.*
- *The method of approach influences my perceptions because I understood the method of approach which will assist me with learning, and applying this approach to my work therefore changing the way I understand my work.*
- *Choosing the right method will allow you to understand more easily thereby having a good perception of the program and accounting.*
- *If I approach the tutorial poorly, then I may not understand the concepts.*
- *Because I knew I my method of approach was correct, my perception of the subject was that it was easier because I was confident in what I was doing.*

8.2.1.7 Learning Attributes (2→8)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 9) and Figure 7, the participants' experiences of how adopting a holistic approach to learning influenced the learning attributes were described. Participants understood that different holistic approaches to learning would cause a participant to acquire different learning attributes. This also implied that the approach a participant adopted when attempting a tutorial question, would affect the learning attributes gained by the participant, and that a good approach would allow a participant to grow as a person as they learned new skills.

One of the newly adopted holistic approaches to learning for some participants was to take their time to carefully read through the lecture content in order to fully understand the discipline content and therefore improve upon what they had learned by attempting the tutorial questions with the same time taken to read the lecture content. This thorough understanding of the discipline content allowed the participants to solve the tutorial questions as they had allocated themselves sufficient time to focus on the threshold concepts being tested. One of these newly adopted holistic approaches to learning, of not rushing, but instead of taking their time to fully grasp the threshold concepts of the discipline, taught the participants how to appropriately manage their time when adapting to learning new concepts.

Participants also realised that the tutorial programme highlighted the important concepts of the discipline, being the threshold concepts of the discipline, and this narrow focus allowed them to plan their study of the discipline appropriately as they knew where exactly to direct their time when carefully reading the lecture content. They therefore found themselves working effectively and efficiently in this tutorial programme in order to achieve their goal of not only understanding the threshold concepts of the discipline, but also passing the discipline with confidence, as well as acquiring the other positive learning attributes gained throughout the tutorial programme. Below are descriptions provided by the participants for the relationship between the newly adopted holistic approach to learning and learning attributes.

- *Doing tutorials and practising more made me understand accounting better and to be able to solve its problems.*
- *My method of approach affects how I grew as a person.*
- *My study method has shown to make me more confident in myself.*

- *The method of approach influences the attributes because the attributes being time management, confidence and learning to adapt is dependent on the method of approach being to understand the concept.*
- *If the student possesses strong attributes of a certain module, then the method of approach is important in achieving the desired goals.*
- *Different methods will allow you to gain different attributes.*
- *If I approached the tutorial in a smart way, then I will gain many attributes.*
- *Planning things out really helped in making me more organised and focusing my time more on important concepts and not just everything.*
- *Organising my time and work helped in working efficiently and effectively.*
- *You will improve your attributes by not rushing and by attempting the questions properly. New skills will be learnt if you have a good method of approach.*
- *How I approached tutorial would have affected my attributes.*
- *My approach was to read and understand then attempt questions, and this helped improve what I've learnt and gained.*

8.3 Secondary Drivers

8.3.1 Demystified Threshold Concepts Infused Materials

Table 10: Demystified Threshold Concepts Infused Materials – Extract of Tabular IRD Sorted in Descending Order of Δ

	1	2	3	4	5	6	7	8	Out ↑	In ←	Δ
4	↑	←	↑		↑	↑	↑	↑	6	1	5

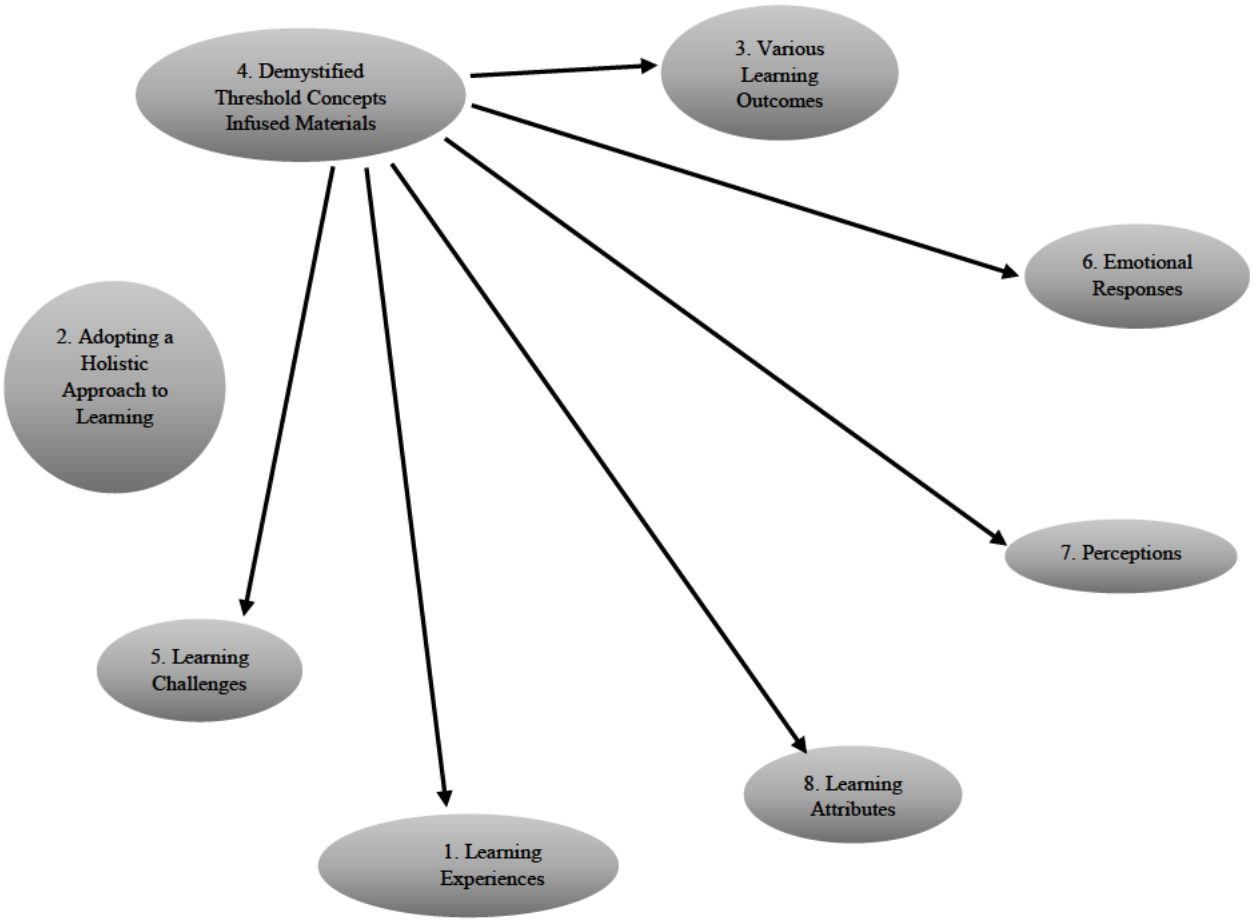

Figure 8: Demystified Threshold Concepts Infused Materials – Extract of Cluttered SID

8.3.1.1 Learning Experiences (4→1)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 10) and Figure 8, the participants' experiences of how demystified Threshold Concepts infused materials influenced the learning experiences were described. Participants understood that if they found the demystified threshold concepts infused materials, i.e. the tutorial questions, to be effective, then they would have gained a much better learning experience throughout the tutorial programme. They found the assistance provided by me when they needed it and the threshold concepts tutorial question explanations, to be very helpful as they simplified the Accounting 101 discipline content and provided them with a much better understanding of the threshold concepts being tested. Participants indicated that they identified that the discipline content and the tutorial questions were connected and further complemented each other, therefore providing them with a holistic view of the threshold concepts of the discipline. They further identified that some of the threshold concepts from the tutorial questions were also connected, and this perception therefore provided them with an understanding of how these threshold concepts worked together. In effect, the participants were able to identify the 'integrativeness' that the Threshold Concepts Theory offered. These perceptions that the participants had of the tutorial questions and the discipline content, allowed them to clear up any doubts and misunderstandings that they had experienced, as they now viewed threshold concepts from a different viewpoint that allowed them to effectively apply these threshold concepts to any tutorial question provided. The pleasant experience that participants had when attempting the tutorial questions had the effect of improving their learning capabilities and therefore motivated them to improve their performance when attempting the tutorial questions as they knew that this would result in a much better learning experience throughout the tutorial programme. Below are descriptions provided by the participants for the relationship between the demystified threshold concepts infused materials and learning experiences.

- *The way the TC summaries simplify the accounting chapters made me have a better understanding of accounting and have a great learning experience.*
- *The help of the tutor (Sasha) has been amazing and I've enjoyed my experience.*
- *When I get questions correct during the tutorial, it improves my level of learning capabilities.*
- *If you understood the work as I understood the tutorials and how they complement each other and were connected proved effective and bettered my learning experience…*

- *If the tutorial is effective, then the learning experience is also effective.*
- *The pleasant experience of the tutorial made me want to improve my performance in the tutorials.*
- *The effectiveness it had on me, helped me understand that the tutorials where all interlinked and helped me understand how all the concepts worked together.*
- *The effectiveness of the tutorial influences the learning experience because if the tutorial was not effective then the student will not find the learning experience helpful. In my case I have found that the tutorial is very effective therefore influencing the learning experience.*
- *If the Tutorials are used in an effective way, then the learning experience should be great.*
- *If the tutorial was effective, then I would have a better experience learning.*
- *How effective a tutorial is results in the impact of my learning experience. In my experience with the tutorials, I realised that the effectiveness aided in my understanding of different concepts, which allowed me to apply these concepts to the tutorials. This effectiveness resulted in a positive learning experience.*
- *If the tutorial was effective, then I will have gained much learning experience.*
- *Once I understood the work and the tutorials and how they intertwined and connected with each other, it improved my learning experience.*
- *The tutorials were helpful just to clear out any doubts and misunderstandings.*
- *Tutorials helped me to also see things from other people's point of view.*
- *If you perform well in the tutorial, you know where you stand regarding the learning experience.*
- *If the tutorial helped me understand the concepts, it made the learning experience great.*

8.3.1.2 Various Learning Outcomes (4→3)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 10) and Figure 8, the participants' experiences of how demystified Threshold Concepts infused materials influenced the various learning outcomes were described. Participants understood that the demystified threshold concepts infused materials influenced the various learning outcomes the participants experienced. Once they understood the design of the demystified threshold concepts infused materials, the tutorial questions, they were able to firstly understand the tutorial question and

requirements thereof. They were next able to understand the threshold concepts of each topic being tested, and therefore understand Accounting 101 as a whole. This improved understanding allowed participants to either strengthen or fine-tune their knowledge of the threshold concepts and therefore the discipline. The demystified threshold concepts infused materials also allowed the participants to learn the threshold concepts of the discipline with confidence, and therefore a fresh new way of thinking regarding the discipline. This new way of thinking was applied by the participants effectively and allowed them to either improve their results or perform well in their examinations. Some participants applied the demystified threshold concepts infused materials design to other areas of their chosen degree. Below are descriptions provided by the participants for the relationship between the demystified threshold concepts infused materials and various learning outcomes.

- *The TC tutorials and summaries made me understand accounting better and get better exam results.*
- *The tutorial helped with exams and to understand it better, which has improved my results.*
- *My understanding of the tuts have helped improve my results.*
- *If the tutorial proved effective and I learnt and understood the question, it will determine a positive outcome especially when I did activity 1.*
- *The tutorials helped with my outcome and understanding of Accounting 101.*
- *The effectiveness of the tutorial influences the learning outcomes because I found the tutorials effective therefore affect what I have learnt in this study.*
- *If the tutorials are effective, then the learning outcome has to be excellent.*
- *In my experience with the accounting program, the effectiveness of the tutorial resulted in learning outcomes. Due the tutorials being effective, it allowed me to have a positive learning outcome of having to a greater understanding and way of thinking towards certain concepts. Which allowed me to apply this knowledge to other tasks.*
- *If the tutorial was effective, then I will have a good learning outcome.*
- *Once I understood the design of the tutorial, I was then able to understand each topic and learn it better.*
- *The tutorials helped in strengthen my knowledge.*
- *The tutorials definitely helped polish my knowledge.*
- *The tutorials were helpful and improved my understanding. I now have more confidence*

in accounting and I understand it better.

- *If the tutorial was effective your learning outcome would be great. You will be able to understand and attempt questions on your own.*
- *If I found the tutorial effective it will affect what I learn from it.*

8.3.1.3 Learning Challenges (4→5)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 10) and Figure 8, the participants' experiences of how demystified Threshold Concepts infused materials influenced the learning challenges were described. Participants recognised that the demystified threshold concepts infused materials, the tutorial questions, were designed in such a way that allowed the participants to grasp an explanation of the threshold concepts in the relevant tutorial question. This meant that they used the tutorial questions in detail to gain a better understanding of the threshold concepts being tested. The deeper understanding of the threshold concepts allowed the participants to either experience few learning challenges or resolve the learning challenges completely. Participants used the tutorials to their benefit by seeing the learning challenges encountered as positive experiences that made them more confident upon completion, and as encounters that they welcomed in their learning journey. Below are descriptions provided by the participants for the relationship between the demystified threshold concepts infused materials and learning challenges.

- *The TC tutorials and summaries made me understand accounting better and that led me to have very few challenges on accounting.*
- *The tutorials helped me understand the issues I was facing in the module and understand the module better.*
- *The effectiveness of the tutorial influences the challenges because I found that the tutorial was effective, and the challenges I experienced during the course of the study have been resolved therefore the effectiveness of the tutorial influences the challenge.*
- *If a student works on his/her tutorials at thoroughly, then he/she won't have challenges.*
- *As the tutorial was effectively working, fewer challenges were experienced.*
- *The challenges faced are determined by the effectiveness of the tutorial. Due to the easy understanding and explanation the were given along with the completion of the tutorial, it resulted in its effectiveness. The challenges I faced were challenges that were good*

to take upon as it built your mindset upon the completion of the task.

- *The tutorials helped me to understand the topic better which helped me to find them less challenging.*

8.3.1.4 Emotional Responses (4→6)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 10) and Figure 8, the participants' experiences of how demystified Threshold Concepts infused materials influenced the emotional responses were described. Participants understood that how effective they felt the demystified threshold concepts infused materials to be, determined the stress or joy experienced by the participants. The majority indicated that they felt the tutorial questions to be effective and this therefore influenced their good emotional state. Participants indicated that they found the design of the tutorial questions to be effective as it helped participants to solve their Accounting 101 learning challenges effectively by clearing any confusion they had experienced throughout the tutorial programme. Participants felt that they could in effect understand the discipline content better, and that they were therefore happy to grow as students and were confident to write their examinations.

As the tutorial questions were found to be effective by the participants, they therefore developed a stronger emotional response to themselves, and felt motivated to continue learning Accounting 101 in the tutorial programme. They were proud of the understanding that they had acquired during their learning journey. Participants indicated that they were extremely happy to be one of the participants in the tutorial programme and that they enjoyed it more than they expected to, and therefore found the study to beneficial and would carry the lessons learned in their chosen degree. Below are descriptions provided by the participants for the relationship between the demystified threshold concepts infused materials and emotional responses.

- *The TC tutorials helped me solve accounting problems better and that made me feel confident to write my accounting exams.*
- *The tutorial has influenced the amount of stress and joy I felt.*
- *The effectiveness of the tutorials have shown that I've learnt from my mistakes and felt happy to grow from it.*
- *By doing tutorials - it cleared my confusion of where I did have confusion and made*

me feel like I could understand the module better.

- *The effectiveness of the tutorial influences my emotional opinion because I found the tutorials effective, I found the study as a whole beneficial and the lessons I have taken away from this will be carried throughout my degree.*
- *Because the tutorial was effective, I felt happier about the program and enjoyed accounting more than I initially did.*
- *The effectiveness of the tutorial resulted in an emotional opinion. How the experience was in tackling the tutorial resulted in a positive or negative mindset. Although, due to my growth in accounting in this program, I developed a motivated emotional opinion.*
- *If the tutorial words effective, then I will be in a good emotional state.*
- *If my tutorial was effective, I have a stronger emotional opinion of myself because it was a positive outcome.*
- *If I learn from the tutorial (it was an effective tutorial) I feel proud of myself.*

8.3.1.5 Perceptions (4→7)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 10) and Figure 8, the participants' experiences of how demystified Threshold Concepts infused materials influenced the perceptions were described. Participants understood that the demystified threshold concepts infused materials, the tutorial questions, would influence their perception of the discipline and of themselves. They realised that if they perceived the tutorial questions as boring, then they would also perceive the discipline and themselves as bored when engaging with the tutorial questions. Once participants understood the design of the tutorial questions and therefore found it to be effective to their learning of the discipline, this meant that the tutorial questions and the threshold concepts explanations provided were used to determine the way in which the participants understood the threshold concepts of the discipline. This deeper understanding of the discipline allowed the participants to perceive the threshold concepts as beneficial and therefore perceive themselves as performing very well in the discipline.

Once the participants felt the tutorial questions to be effective to their learning journey, they then developed a much better perception of the discipline of Accounting 101 as a whole in comparison to their initial perception. The perception participants had of the discipline as a whole, therefore influenced how they perceived themselves. The demystified threshold concepts infused materials therefore made participants see themselves as being able to

accomplish anything that they put their minds to. Participants indicated that they were motivated to work on themselves and were therefore motivated to perform as best as they could when engaging with the threshold concepts of the discipline. As the demystified threshold concepts infused materials, the tutorial questions, provided them with detailed explanations, this led to participants acquiring a deeper understanding of Accounting 101, which allowed them to perceive themselves as performing very well in their examinations. Below are descriptions provided by the participants for the relationship between the demystified threshold concepts infused materials and perceptions.

- *The TC tutorials and summaries made me understand accounting better and made think that I will perform better on my accounting exams.*
- *The tutorial results have influenced my view of the module overall.*
- *The tutorials have shown me that I can do anything that I put my mind to, hence influencing my view as determined.*
- *By doing tutorials - it helped me to understand and see myself as doing a lot better.*
- *The effectiveness of the tutorial influences my perceptions because the way the tutorial is set out to work, determines the way I understand the work. I found the tutorial effective which in turn means that I understand the work therefore making this study beneficial.*
- *If you perceive tutorials to be boring, then they won't be effective.*
- *If the tutorial is effective, you should gain a better perception of accounting.*
- *If the tutorial was effective, then I would understand it better.*
- *Once I found the tutorials to be helpful to me, my perception of the subject improved.*
- *Tutorials motivated me more to work on myself.*
- *Tutorials motivated me to work on doing better.*
- *Because the tutorial was effective, I was able to perceive the work as beneficial. The helped and explanations provided for tutorial 5 assisted me a lot.*
- *If the tutorial was effective and I did learn, I would have a good perception.*

8.3.1.6 Learning Attributes (4→8)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 10) and Figure 8, the participants' experiences of how demystified Threshold Concepts infused materials influenced the learning attributes were described. Participants understood that the demystified threshold concepts infused materials would allow them to gain many positive learning attributes. They indicated that they found the tutorial questions to be beneficial as they found that they guided them in the right direction. They felt that the effective design of the tutorial questions allowed them to improve their understanding of the threshold concepts as time passed. Participants indicated that this progressive understanding allowed them to perceive Accounting 101 as easier than they had initially thought it was prior to the commencement of the tutorial programme. This change in perception influenced the personal learning attributes that the participants acquired. Participants demonstrated extreme levels of confidence in the tutorial programme as they were comfortable to ask me questions without fear of making a mistake. Participants also quickly developed the ability to learn the new threshold concepts being tested and were confident that they could not only overcome all the learning challenges that they were presented with, but also handle more complex tutorial questions. Participants also indicated that based on the demystified tutorial design, they were able to implement the method and layout used in the tutorial questions in order to effectively and efficiently complete the accounting problems provided in a timeous manner. Below are descriptions provided by the participants for the relationship between the demystified threshold concepts infused materials and learning attributes.

- *The TC tutorials made me solve accounting problems better and finish my tasks on time.*
- *My understanding during the tutorials have influenced the personal traits that I gained.*
- *The tutorial has made me a stronger person. I feel that I can handle more complex questions in the future.*
- *The effectiveness of the tutorial influences the attributes because if the tutorial was not effective there would not be a beneficial learning outcome which in turn affects the attributes.*
- *The effectiveness of the tutorial gained me many attributes. For e.g. ability to tackle challenges, extreme level of confidence, and ability to learn new concept easily.*
- *The tutorial was effective - then I will have gained many attributes.*
- *Once I started to do the tutorials, my attributes started to improve because my*

understanding of the subject kept getting better. I felt [at] confident to interact with the lecturer one on one which helped the effectiveness.

- *Tutorials really guided me in the right direction.*
- *Tutorials helped me to work more efficiently and effectively.*
- *The tutorials that we did made accounting easier for me and has been effective and I now understand a lot better.*
- *If I found the tutorial effective, it will cause me to gain good attributes.*

8.3.2 Learning Challenges

Table 11: Learning Challenges - Extract of Tabular IRD Sorted in Descending Order of Δ

	1	2	3	4	5	6	7	8	Out ↑	In ←	Δ
5	↑	←	↑	←		↑	↑	↑	5	2	3

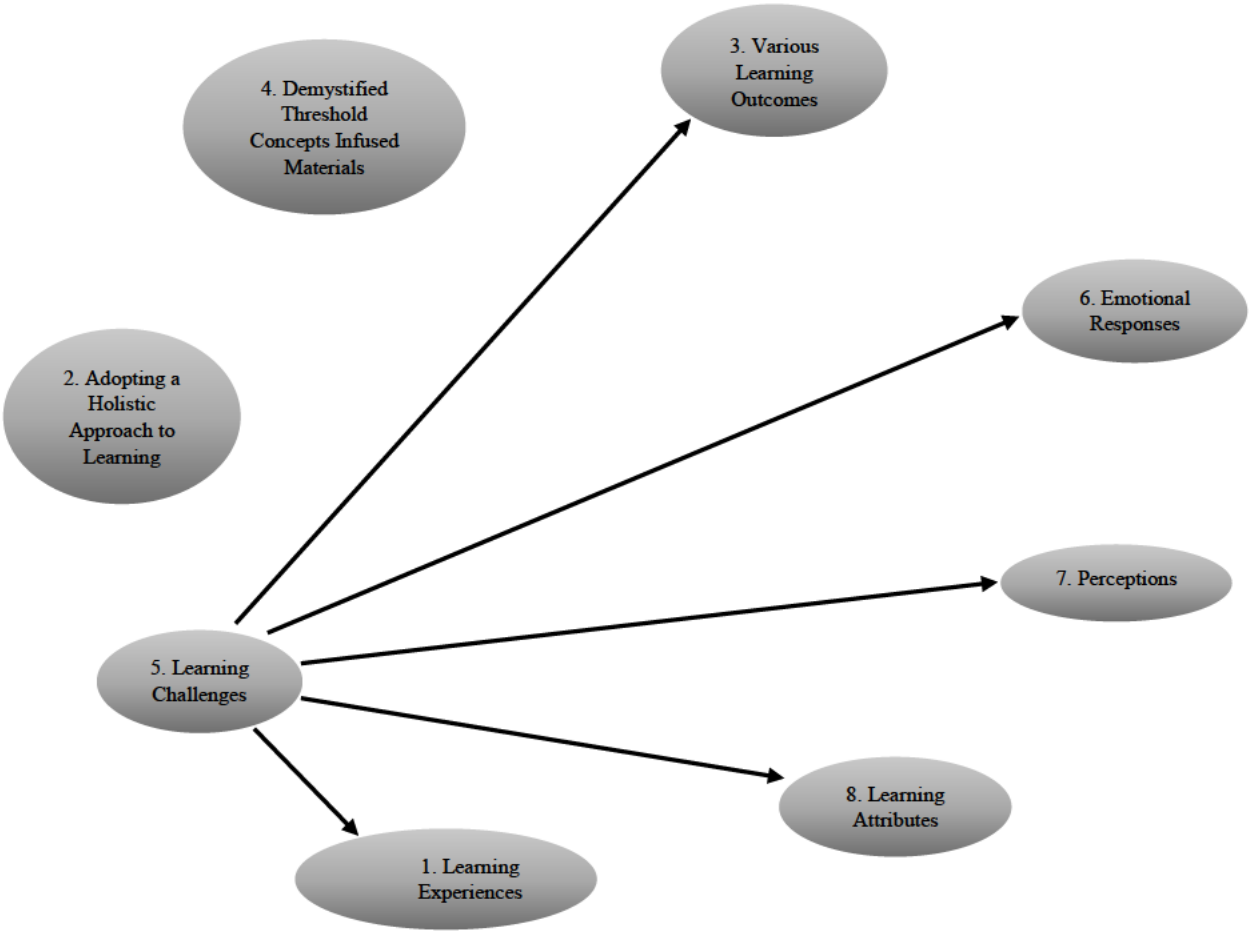

Figure 9: Learning Challenges - Extract of Cluttered SID

8.3.2.1 Learning Experiences (5→1)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 11) and Figure 9, the participants' experiences of how learning challenges influenced the learning experiences were described. Participants indicated that they experienced plenty of ups and downs, accomplishments and learning challenges, throughout the tutorial programme, which sometimes left them feeling overwhelmed and unable to complete the more challenging tutorial questions in a timeous manner. They spent additional time engaging with the lecture content relating to the challenging tutorial questions, and therefore took a longer time to fully understand those threshold concepts of the discipline. This additional time spent allowed participants to enhance their knowledge of the discipline as they eventually fully grasped the threshold concepts that they deemed to be challenging, which therefore provided them with a more interesting learning experience.

All tutorial questions did have some sort of challenging element to it. However, once the participants became familiar with the demystified tutorial question design and the step-by-step explanations provided on how the tutorial questions tested each threshold concept, their understanding of the particular topic deepened and so too did their learning experience. Participants also overcame their learning challenges once they determined the correct holistic approach to learning to utilise. This beneficial newly adopted holistic approach to learning allowed participants to therefore improve their learning experiences and also have fun while learning in the tutorial programme.

Participants indicated that they felt uncomfortable when initially approaching the topics that they did not understand. However, they were determined to focus on overcoming the challenging tutorial questions. This determination allowed them to work hard and therefore learn more, leaving them with a sense of accomplishment and confidence upon completion of the learning challenge. The difficulties faced and the mistakes made during the tutorial programme allowed the participants to grow during their learning experiences and therefore made the journey even more memorable for them. One of the participants indicated that as there were few learning challenges encountered, it provided him with a better learning experience as other distractions in his personal life were seen as further challenges to his learning. Below are descriptions provided by the participants for the relationship between the learning challenges and learning experiences.

- *Having a challenge on the Adjustments topic made it hard to finish my tutorials on time because I spent a lot of time studying it.*
- *The difficulties I faced has gave me an experience of growth.*
- *The mistakes I've made has made the journey memorable.*
- *When I dealt with the tutorials they were challenging and allowed me to see how the work can be tested and allowed me to understand it.*
- *Some of the challenges did influences my experiences e.g. for some of the stuff I wasn't too aware of it did take me longer to understanding and it added to experience of learning Accounting 101 and made it more interesting.*
- *The parts I did not understand affected the learning experience, it made it uncomfortable at first, but it improved over time for me.*
- *There are challenges that I faced in each tutorial but when I overcame it, it gave me a sense of satisfaction because of all the hard work I put in to find the answer paid off.*
- *The challenges influenced the learning experienced due to the challenges I have experienced in the study have been cleared up and have in turn influenced my learning experience as I have found the approach used to clear up these challenges have been beneficial.*
- *If the learning experience is great, it means there were more challenges which required the student to engage more with the material and enhance.*
- *During the tutorial I noticed that when I was having fewer challenges, I was having a better learning experience.*
- *Challenges for me were a key impact on my learning experience. Although for me these challenges had a positive impact. Challenges experienced during the tutorials program allowed me to build the confidence to tackle difficult questions, and made me feel a sense of accomplishment upon completing a task.*
- *If I come across and overcome challenges, it will help me with my learning experience.*
- *Even though some of the activities were challenging, once I figured out the correct way to do it, it improved the learning experience and made it more fun.*
- *The different distractions at home with having more than one sibling and being the oldest, I have a lot more responsibilities and juggling them was hard, but I tried my best.*
- *There were a lot of ups and downs through this whole experience, where sometimes I am feeling overwhelmed.*

- *The challenge I experienced with bank recon will cause my learning experience to be higher because I learnt more. I was more focused to overcome the challenge.*
- *The challenges I had with accounting has made my learning experience better.*
- *The challenges experienced during the tutorial lead to more learning experiences. The more challenges, the further abroad your learning experience will be. I did not know what a journal entry or a general ledger was, and I've learnt from it. The bank recon was also hard, but the steps given to us helped a lot.*

8.3.2.2 Various Learning Outcomes (5→3)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 11) and Figure 9, the participants' experiences of how learning challenges influenced the various learning outcomes were described. Participants understood that the learning challenges encountered during the tutorial programme, would directly influence the various learning outcomes of the discipline. One of the participants indicated that the learning challenges experienced comprised of those within the discipline and those external to the discipline and that he had to exercise extreme levels of discipline, to balance both types and therefore gain an overall positive learning experience. Participants also realised that the learning challenges would result in either a positive or negative learning experience depending on the perception of the participants. Other participants felt that despite the frequency of the learning challenges presented, they would still have a positive learning experience towards the threshold concepts being tested in the tutorial programme. One of the participants, however, indicated that the learning challenges encountered would result in a negative learning outcome as he failed to understand the threshold concepts of the discipline.

Even though the learning challenges presented initially slowed down the participants' learning of the threshold concepts, they utilised different holistic approaches to learning that they resonated with, in order to obtain a full understanding of the discipline. One of the participants indicated that he experienced the learning challenge of wanting to just browse through the lecture content. He soon realised that this superficial understanding would impact the level of understanding gained. Participants also utilised the demystified tutorial question design as a means to reach the desired various learning outcomes of the discipline. The participants' understanding of the threshold concepts of the discipline was tested as they faced the learning

challenges of the tutorial questions. They indicated that they were intent on navigating their way through the learning challenges by rectifying their mistakes made and learning from these mistakes. They realised that overcoming these learning challenges would allow them to be more confident and therefore result in improved various learning outcomes of the discipline as well improved examination results. Below are descriptions provided by the participants for the relationship between the learning challenges and various learning outcomes.

- *The challenge of online learning and having bad network connections sometimes made it hard to write tests and exams which resulted to not achieving the grades we wanted.*
- *My challenges have influenced the outcome of my module.*
- *Misunderstandings have taught me and showed in my results.*
- *The more challenging the tutorial will affect the outcome when I understand it as it tested my understanding and improve it therefore a positive outcome.*
- *In some cases, the challenges slowed me down. Overall, the outcome of the module and tutorials allowed me to use different methods of learning to understand the module as a whole.*
- *Wherever I had trouble, I tried to go back and fix. Which affected the learning outcomes.*
- *In a particular task, I encountered some challenges but by overcoming those it improved and enhanced the outcomes of that task.*
- *Challenges influences the learning outcomes because the challenges I have experienced and learnt from in this study influences my learning outcome.*
- *If there are more challenges, then the outcomes [are] can be either positive or negative.*
- *The more challenges you have, the more unsuccessful you would be at understanding the concepts thus having unsuccessful learning outcomes.*
- *The challenge you face during the activity will obviously impact your learning outcome.*
- *If you are having challenges with a particular concept, you won't be able to learn the module effectively.*
- *If I come across fewer challenges, then I will have a good learning outcome.*
- *Once I overcame the challenges of the subject and each topic as a whole, I felt my confidence improved which helped improve on learning the subject.*
- *The distractions were more than ever as balancing wasn't easy, but I definitely had to be discipline myself to get a positive learning outcome.*

- *Challenge were an obstacle but I tried my best to navigate them.*
- *Bank recon was a challenge, if you follow the format, it will get you to reach your learning outcome.*
- *If I experienced challenges, it will determine if I had a good learning outcome.*
- *The challenge of skimming and not reading clearly affected my learning outcome as I was not understanding. It was more mechanical as opposed to thinking about it.*

8.3.2.3 Emotional Responses (5→6)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 11) and Figure 9, the participants' experiences of how learning challenges influenced the emotional responses were described. Participants understood that the level of difficulty experienced in the tutorial programme would influence their emotional responses. They also realised that as the number of learning challenges experienced increased, so too did the number of emotional responses.

Some participants felt that the learning challenges experienced resulted in a negative emotional response to their performance. They felt that many learning challenges may cause them to be stressed or to lose interest in the discipline and they wanted to skip that particular learning challenge and move to the next one as they felt emotionally drained by their encounter. Others felt a little upset or stupid if they did not understand initially.

Some participants indicated that they felt great when faced with the challenge of not understanding the threshold concepts being tested. They expressed that they felt this way as they knew that they possessed the ability to not only confront these learning challenges, but to overcome them too. This in turn tested their ability to apply their knowledge after the learning challenge was fully explained and fully learned. This experience allowed them to become more confident and therefore positively impacted their emotional responses to the threshold concepts of the discipline. Below are descriptions provided by the participants for the relationship between the learning challenges and emotional responses.

- *Having a lot of challenges on accounting can make a student feel stressed or lose interest in studying accounting.*
- *The level of difficulty affected my emotional opinion on the workshop.*

- *My challenges that I've faced by not understanding certain concepts have influenced how I felt about learning accounting overall which was great.*
- *So, the tutorials and learning areas that did challenge me made me a bit upset when I didn't understand my work and my overall emotional opinion of the module was influenced by the challenges I encountered when doing the tutorials.*
- *Sometimes the difficulties were very demotivating and I felt stupid for not understanding the concepts.*
- *If you cannot overcome a certain problem, you will become frustrated and your mind just think to skip that question and move on.*
- *The challenges influenced my emotional opinion because the challenges I have experienced and learnt from in this study influences my opinion about the study.*
- *I feel that challenges affect your emotional opinion because if you are having trouble with a particular question or section…you start doubting yourself and your ability of understanding and that brings down your confidence.*
- *If you have more challenges, then the probability of a student having more emotional opinion is high.*
- *If more challenges are faced, then that would give a bad emotional opinion towards accounting.*
- *The challenges faced affected my emotional opinion. I was able to tackle and overcome challenges experienced in the tutorial which tested our ability to apply our knowledge. This grew my confidence and positively impacted my emotional opinion.*
- *If I faced many challenges, then I would be emotionally drained.*

8.3.2.4 Perceptions (5→7)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 11) and Figure 9, the participants' experiences of how learning challenges influenced the perceptions were described. Participants indicated that if they encountered many challenges while learning the threshold concepts of the discipline, they would then perceive the discipline and themselves in a negative manner. One of the participants indicated that the challenge of learning these threshold concepts in an online platform made her apprehensive about her examination performance as learning challenges like load shedding or network interruptions may prevent her from studying as effectively as she would have in a face-to-face environment. Participants indicated that if

they had heard that other participants experienced a particular tutorial question as challenging prior to them attempting it, then they had a preconception of that tutorial question as being difficult too. Even though participants indicated that they felt a little despondent when encountering difficulty, they did however understand that they needed to stay as focused and as determined as possible in order to overcome these difficulties.

Many participants possessed a negative preconception of the discipline of Accounting 101 as a very challenging discipline prior to them engaging with the tutorial programme. They realised that it was imperative that they change their focus to that of a positive one so as to change their perception of Accounting 101 in order to perceive themselves as performing well in this discipline. Participants engaged with me when they were faced with learning challenges and this allowed them to gain a new understanding of the threshold concepts of the discipline. The participants indicated that they possessed the ability to overcome the learning challenges presented and that they were determined to apply their newly acquired understanding of the discipline and therefore learn and grow from the mistakes they had made. This process allowed them to become more confident when approached with a learning challenge as this had the effect of improving the perception of themselves. Participants were proud of their achievement of overcoming learning challenges as they realised that they had fully grasped the threshold concepts of the discipline. Below are descriptions provided by the participants for the relationship between the learning challenges and perceptions.

- *The challenge of studying online made me think that I will not perform good on my exams because problems like load shedding and bad network connections could interrupt.*
- *My challenges influenced how I felt the tutor's (Sasha's) effectiveness.*
- *The mistakes that I made showed me that I can learn and grow.*
- *Challenges influenced the way I saw myself learning. e.g. when facing issues while doing tutorials I did feel despondent when not being able to understand. When able to complete tutorials correctly, I felt proud of myself.*
- *Challenges affected my perceptions in the way I looked at studying accounting.*
- *For example, if you hear some other students complaining about a certain task before you begin it, this will perceive that the task is hard.*
- *The challenges influenced my perceptions because what I have learnt from the*

challenges I experienced in this study, determines the way I understand the work after the study has been completed.

- *If you faced a lot of challenges, that would make you perceive accounting in a bad way.*
- *Our challenges would influence our perception of accounting.*
- *If the tutorials are effective in the sense where students are able to grasp concepts better as opposed to lectures. Concepts which were found to be challenging can prove to change our perception of accounting.*
- *Due to my ability to overcome challenges faced in tutorials which grew my confidence, it changed my perception of the subject of accounting, and my ability to apply and work through problems.*
- *If I faced and overcame many challenges, then it would mean I have understood the concepts.*
- *The challenges that I faced did sometimes discourage me, but overall I did my best to stay focused.*
- *The challenges I faced resulted in me asking for assistance and therefore gaining new understanding, this helped improve my perception as I overcame challenges.*
- *Accounting is a challenging subject but this changed my focus and helped my change my perceptions.*

8.3.2.5 Learning Attributes (5→8)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 11) and Figure 9, the participants' experiences of how learning challenges influenced the learning attributes were described. Participants indicated that the learning challenges imposed on them throughout the tutorial programme, not only tested their existing learning attributes, but also allowed them to acquire new learning attributes for every learning challenge that they encountered. As participants overcame their learning challenges, they also gained further learning attributes. The indicated that they were motivated to expend the necessary time on the learning challenges presented and therefore acquired the learning attributes of patience and perseverance. Participants also tested their willingness to work in an environment with learning challenges and therefore acquired the learning attribute of focusing their attention on working harder. They also indicated that they improved their tactical abilities when approaching a learning challenge and therefore acquired the learning attributes of planning and organising. Participants adopted a

holistic approach to learning in order to overcome the learning challenges of the discipline and therefore acquired the learning attribute of adaptability. They indicated that their ability to overcome the learning challenges presented, improved their initial attitude towards these learning challenges and therefore allowed them to acquire the learning attributes of self-esteem and confidence. Below are descriptions provided by the participants for the relationship between the learning challenges and learning attributes.

- *The challenges taught me patience and perseverance.*
- *My challenges have built my self-esteem.*
- *The challenges I've faced has improved my tactical capabilities.*
- *By encountering them, I was able to use different approaches and methods to actually complete the module.*
- *The challenging side of this program tested my attributes as a student.*
- *Every challenge you overcome you will have to learn a new skill or attribute.*
- *The challenges influenced the attributes because the challenges experienced in the study determines the attributes, because the attributes are the skills you have acquired during the study and I have learnt many skills with the challenges I have experienced.*
- *Challenges allowed me to gain attributes, but the most important ones that stood out were my increase in confidence and my ability to tackle problems.*
- *If I faced and overcame many challenges, then I would have gained many attributes.*
- *Once I felt more confident in overcoming my challenges of the topic, I felt it improved my attributes towards it.*
- *The challenges that I faced really helped to be more organised and to push myself more.*
- *The challenges I faced really tested my willingness to work hard and I feel like it strengthened my ability to work hard and to be focused.*
- *Due to the challenges I faced, it allowed me to build my confidence and positively influence my attributes.*

8.3.3 Learning Experiences

Table 12: Learning Experiences - Extract of Tabular IRD Sorted in Descending Order of Δ

	1	2	3	4	5	6	7	8	Out ↑	In ←	Δ
1		←	↑	←	←	↑	↑	↑	4	3	1

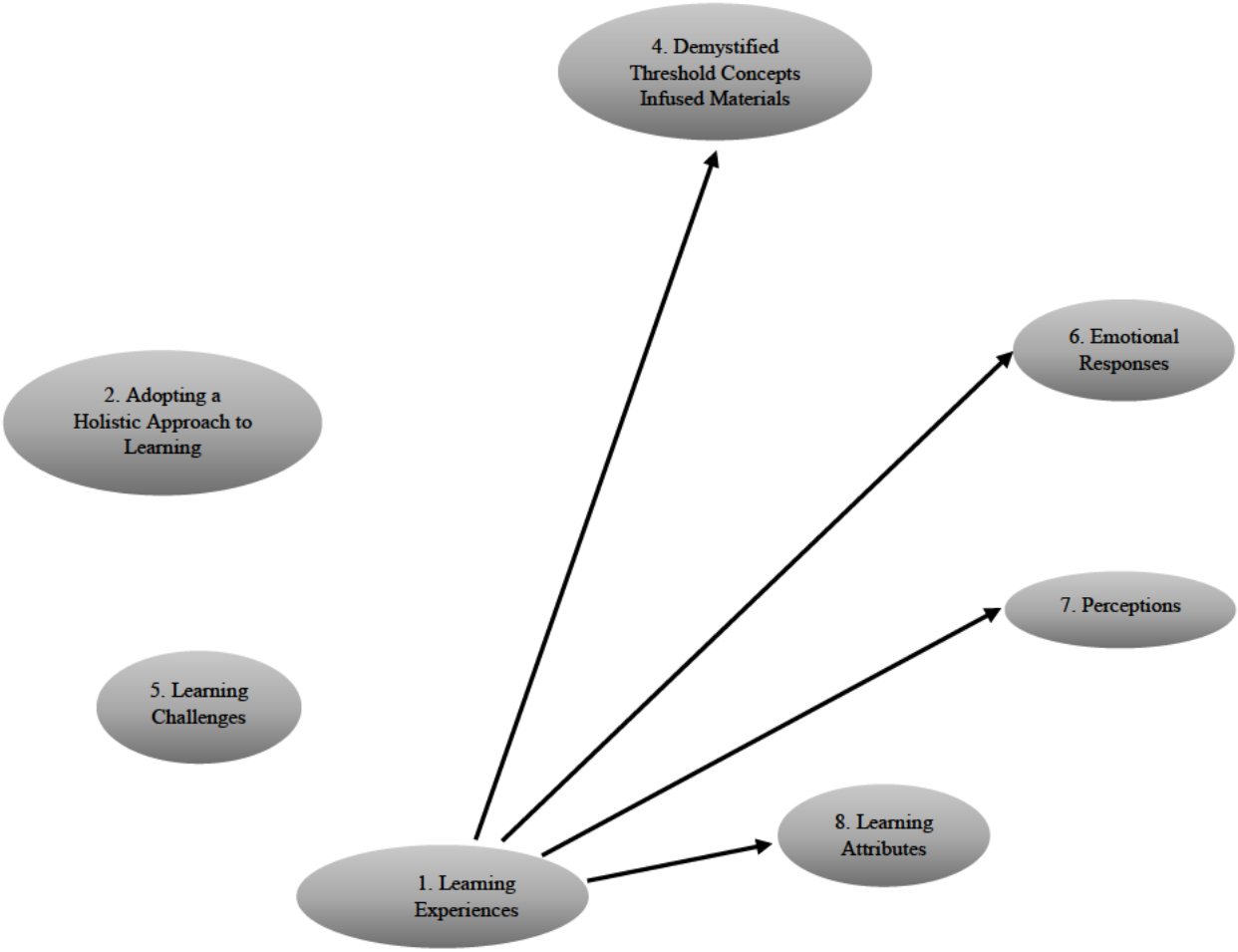

Figure 10: Learning Experiences - Extract of Cluttered SID

8.3.3.1 Various Learning Outcomes (1→3)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 12) and Figure 10, the participants' experiences of how learning experiences influenced the various learning outcomes were described. Some participants indicated that a great learning experience allowed them to achieve great various learning outcomes. Participants felt that the learning of the threshold concepts and lecture content of the discipline would contribute to their results when they had to write their examinations in their online learning programme. Other participants indicated that this great learning experience resulted in successful various learning outcomes that participants were eager to apply to the other disciplines that they were studying in their chosen degrees as they felt that they had benefitted from the tutorial programme. Another participant was unsure about whether what they had learned in the discipline of Accounting 101 would be utilised beyond their degree, in a real-life situation.

Participants indicated that their interactions with me proved to be pleasant, positive and useful to their learning experience, as they felt no pressure to pass or fail when engaging with me to acquire a better understanding of the threshold concepts of the discipline. This deeper understanding helped participants to learn the new threshold concepts presented to them. As the participants engaged further with the threshold concepts, they improved their performance of the tutorial questions provided and started to enjoy their interaction with the threshold concepts of the discipline. Participants were also keen to reattempt the tutorial questions as they felt confident with their ability to apply their knowledge to the challenges presented. This platform allowed participants to fully enjoy the tutorial programme and therefore improve on their existing learning attributes, knowledge of the threshold concepts and ultimately their various learning outcomes of the discipline. Below are descriptions provided by the participants for the relationship between the learning experiences and various learning outcomes.

- *Learning the TC and doing extra tutorials made me achieve better grades in my accounting exams.*
- *My experience would influence my overall outcome because of what I've learnt from accounting whether or not I'd actually use it in real life situations.*
- *It was a pleasant experience with the tutorials and teacher. There was no pressure to pass or fail and that made it a pleasant experience which affected my outcome as I felt I gradually got better.*

- *My enjoyment of the program affected how much I learnt from the tutorials.*
- *Once you learn something new and become good at it and enjoy it, you would most probably do it again which causes repetitive work which improves your skills and knowledge.*
- *The learning experience influenced the learning outcome because I found the learning experience very helpful therefore the learning outcome was successful as I have benefitted from this study.*
- *In order to view your learning outcomes, I have learnt that this result lies in your learning experience. With my positive learning experience, I viewed the results of having positive learning outcomes. For e.g., a better understanding of concepts, confidence in tackling difficult work problems, and the ability to apply my knowledge.*
- *My learning experience will contribute towards my results.*
- *Just having a positive and helpful teacher was helpful in understanding different concepts and really made the learning experience easier.*
- *My learning outcomes were positive as it was nice being able to engage in conversations of understanding.*
- *My experience has been great, and I can therefore apply what I have learnt here in other modules.*
- *Because I had a great learning experience, I will have a great learning outcome.*
- *My learning experience will affect my learning outcome. I enjoyed the learning experience it helped me a lot, therefore the learning outcome was good.*

8.3.3.2 Emotional Responses (1→6)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 12) and Figure 10, the participants' experiences of how learning experiences influenced the emotional responses were described. Participants understood that the learning experiences acquired throughout the tutorial programme would influence their emotional well-being. They indicated that their entire learning experience allowed them to develop a positive emotional response about the discipline and themselves and they felt really happy as a result of this.

The tutorial programme was a platform in which the participants felt comfortable enough to learn new knowledge, the threshold concepts of the discipline of Accounting 101. The

participants were therefore motivated to work harder by attempting the tutorial questions. Participants indicated that upon the successful completion of a tutorial question, they realised that their way of thinking had changed and that they could apply this thought process when they were confronted with similar questions.

The enjoyment that participants experienced during the tutorial programme allowed them to feel more confident about studying a discipline that they initially possessed negative preconceptions of. Participants indicated that their interactions with me allowed them to feel supported as they felt comfortable enough to ask me for assistance as often as they needed to.

The confidence the participants possessed influenced their positive learning experiences and therefore allowed them to develop an enhanced emotional response to the threshold concepts of the discipline and themselves. Below are descriptions provided by the participants for the relationship between the learning experiences and emotional responses.

- *Having a great learning experience made me feel confident about studying accounting.*
- *The experience I've had thus far has influenced the happiness I feel today.*
- *The whole learning experience made my opinion great in so many ways.*
- *Once you complete a task successfully, it will change your way of thinking when approaching similar questions.*
- *The learning experience influences the emotional opinion because I have found the learning experience very helpful and I am going to apply what I have learnt from this study to my life. Therefore, my emotional opinion was influenced by the experience I had in the study.*
- *The experience of learning will contribute towards my emotional well-being.*
- *My learning experience really helped me to be more positive due to just how helpful the teacher was.*
- *I think that the experiences you experience during the semester influences how you feel about it at the end of it… hence I say 1 influenced 6.*
- *My learning experience really helped me to be optimistic and the teacher was also supportive.*
- *The tutorials got me learning and I was motivated to work and attempt the tutorials.*
- *Due to my learning experience, it allowed me to develop a positive emotional opinion of myself.*

- *My learning experience with attempting the tutorials will influence my emotional opinion. I feel I enjoyed it; it increased my confidence in the subject.*
- *I'm more confident now and that helps with my learning experience and gives me a better emotional opinion.*

8.3.3.3 Perceptions (1→7)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 12) and Figure 10, the participants' experiences of how learning experiences influenced the perceptions were described. Participants understood that their learning experiences throughout the tutorial programme would affect their perception of the threshold concepts within the discipline of Accounting 101. They also realised that their learning experiences acquired would determine whether they actually understood the threshold concepts being tested.

One of the participants indicated that their prior bad experiences with the discipline influenced her perceptions prior to commencing with the tutorial programme. Participants engaged with the lecture content by themselves before attempting the tutorial questions. They also interacted with me on a one-on-one basis whenever they needed further assistance. Participants indicated that this individual attention helped them to remain positive and also proved to be beneficial to them when approached with learning challenges in the tutorial questions. If their learning experience was positive, then the participants were able to understand the threshold concepts and grow in the tutorial programme. This positive learning experience allowed the participants to also enjoy engaging with the tutorial questions and to therefore realise that Accounting 101 was not as difficult as they initially thought it was and that they just needed to engage with the discipline content regularly.

Participants indicated that once they completed a tutorial question successfully, their way of thinking about Accounting 101 had changed too. This resulted in their perception of the tutorial questions, threshold concepts of the discipline and themselves as being positive too, as upon the completion of the tutorial programme they possessed a deeper understanding of the discipline content and perceived themselves as being able to easily navigate their way through this numbers-based discipline. Below are descriptions provided by the participants for the relationship between the learning experiences and perceptions.

- *Having a great learning experience made me understand that accounting is not as hard as students think it is they just have to practise it more often.*
- *My experience has affected my view of the module as a whole.*
- *My experience has played a role in my thoughts about the module, which was amazing.*
- *Does make me see myself a lot better with understanding the world of finance and I'm able to easily to navigate myself through numbers.*
- *Past bad experiences with the subject of accounting affected my perception.*
- *Once you complete a task successfully it will change your way of thinking when approaching similar questions.*
- *If the experience was good, then we would have a good perception of the tutorial and accounting.*
- *My learning experience will determine whether I understand the concepts.*
- *Once I started to enjoy the work, my perception of the subject improved.*
- *Our learning experience would influence the perception of oneself.*
- *Experiences are things that happened in the past, won't they influence the way you think of yourself?*
- *I was definitely a lot of challenges which changed my perception on everything but overall having a teacher who was helpful definitely helped to stay positive.*
- *My perception on my learning experience is that it was good, a lot of self-work was done.*
- *If my experience was good and I understood concepts, my perception of myself and the whole topic would be that I did grow from it and it will help me understands stuff.*
- *Having done accounting one-on-one, I felt good.*
- *The experience was good; I learnt a lot therefore that gives me a good perception.*
- *Due to my learning experience - it allowed me to develop a positive perception of myself.*

8.3.3.4 Learning Attributes (1→8)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 12) and Figure 10, the participants' experiences of how learning experiences influenced the learning attributes were described. Participants understood that their learning experiences determined the learning attributes that they acquired. They indicated that when encountering any experience, they learned something

from that experience. They also indicated that when encountering a challenging experience in the tutorial programme, they would compare their tutorial attempt to the demystified threshold concepts explanations provided and the textbook and therefore learn from their mistakes made. This newly adopted holistic approach to learning when encountering challenges allowed participants to develop the ability to learn new threshold concepts with ease.

As participants continued to engage with the tutorial programme, their initial broad, superficial understanding of the discipline progressed as their learning experiences progressed. The learning attributes participants started to acquire allowed their initial understanding to develop further to that of a more in-depth one. This deeper understanding of the threshold concepts of the discipline resulted in participants enjoying their learning experiences, and therefore allowed them to be more confident with their knowledge of Accounting 101.

Another learning attribute that participants indicated they acquired from the tutorial programme, was being able to work independently when having to engage with the lecture content before attempting the threshold concepts tutorial questions. As participants granted me with a period of seven weeks to conduct the study with them, they also indicated that they learned how to manage their time appropriately and how to work under pressure in order to meet the deadlines set. Participants indicated that this threshold concepts journey taken contributed to the mentally stronger people that they had become and that they were looking forward to utilising the learning attributes that they acquired in this tutorial programme in both their academic and personal lives going forward. Below are descriptions provided by the participants for the relationship between the learning experiences and learning attributes.

- *Having such a great learning experience taught me to work under pressure, independently and to be confident about my studies.*
- *The journey has contributed to the person I've become. I am more confident in myself.*
- *My experience through the workshop has made me mentally stronger with a broader understanding of the module.*
- *The overall experience did help me understand accounting in more depth and acquired skills I will use in the future and possibly for my life.*
- *My learning experience in the program effected my attributes as I gained many attributes due to my positive learning experience. For e.g. ability to tackle challenges,*

extreme level of confidence, and ability to learn new concept easily.

- *My learning experience will determine which attributes I pick up.*
- *Once my learning experience got better, all my attributes started to develop my understanding of the subject and time management.*
- *My learning experience helped me to be more confident in my knowledge in accounting.*
- *As I've studied accounting many times, it resulted in me being confident.*
- *Whatever experience you have you learn from it. For the bank recon I used to compare to the one in the book and realised I did something wrong. I learnt not what to do.*
- *If I enjoyed the learning experience, if I did learn the concepts it will improve my attributes.'*

8.4 Conclusion

This chapter allowed me to present that analysis of the affinity pair relationships identified by using the Pareto Protocol and Power. This analysis was based on the detailed explanations of each affinity pair relationship identified by the participants for the primary and secondary drivers of the study. These explanations provided me with a more holistic view from the participants regarding their experiences of learning Accounting 101 in a threshold concepts tutorial programme, which overall proved to be beneficial in nature to them. The analysis of the explanations relevant to the secondary and primary outcomes were presented in the next chapter.

CHAPTER NINE

ANALYSIS OF THE AFFINITY PAIR RELATIONSHIPS: OUTCOMES

9.1 Introduction

The purpose of this chapter was to perform an analysis of the explanations provided by the participants for each affinity pair relationship identified, using the Pareto Protocol and Power. The structure of this chapter follows that of the Tabular IRD sorted in descending order of delta. The drivers of the study were analysed in the previous chapter and the outcomes of the study, being secondary and primary in nature were analysed in this chapter. For each of these classifications, the relevant extract from the Tabular IRD sorted in descending order of delta as well as the relevant extract from the Cluttered SID was inserted.

The explanations provided by the participants for each affinity pair relationship have been taken from the Adapted Simple ART WhatsApp Messenger group chat, the Individual Detailed ARTs and the theoretical coding aspect of the individual interviews. The analysis of the explanations relevant to the outcomes were presented in this chapter.

9.2 Secondary Outcomes

9.2.1 Various Learning Outcomes

Table 13: Various Learning Outcomes - Extract of Tabular IRD Sorted in Descending Order of Δ

	1	2	3	4	5	6	7	8	Out ↑	In ←	Δ
3	←	←		←	←	↑	←	↑	2	5	-3

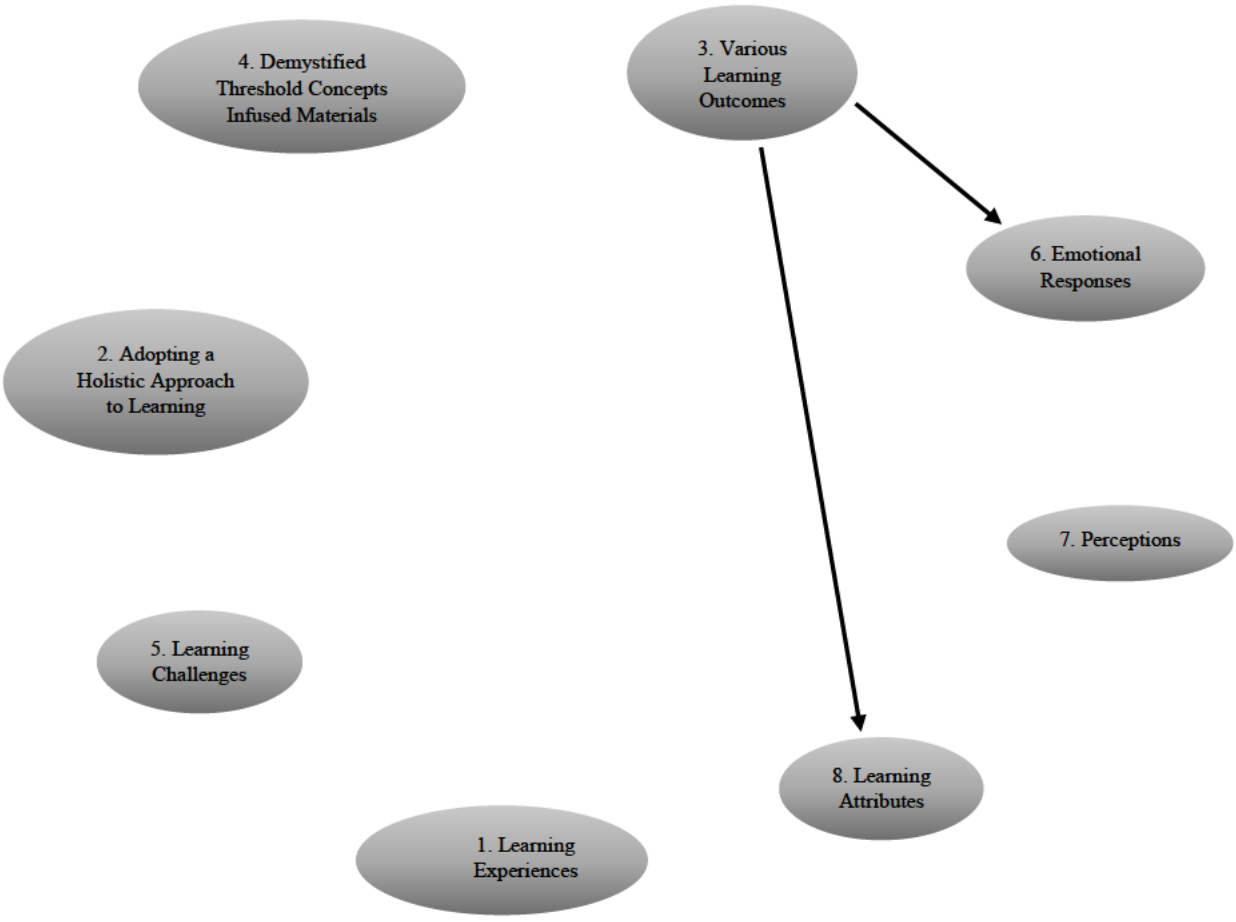

Figure 11: Various Learning Outcomes - Extract of Cluttered SID

9.2.1.1 Emotional Responses (3→6)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 13) and Figure 11, the participants' experiences of how various learning outcomes influenced the emotional responses were described. Participants understood that the outcome of their learning experiences influenced their emotional responses. They also realised that the effectiveness of their newly adopted holistic approach to learning also influenced their various learning outcomes and therefore their emotional responses. They indicated that the level of understanding acquired from the tutorial programme influenced how they felt about themselves and the threshold concepts of the discipline.

Participants indicated that they found the tutorial programme to be effective as they understood the threshold concepts being tested in the tutorial questions. The achievement of the tutorial programme's various learning outcomes boosted the morale of the participants as they felt more excited about the threshold concepts of the discipline and themselves.

Participants reported that their performance in the tutorial programme and online concept tests/ quizzes provided by their discipline experts prior to the commencement of their online learning programme, not only improved from the commencement of the programme, but that they also excelled and felt happy and confident to continue studying Accounting 101 in the programme. Below are descriptions provided by the participants for the relationship between the various learning outcomes and emotional responses.

- *Getting good tests results made me feel happy and confident about studying accounting.*
- *My results indicated how I felt I could improve.*
- *My results have influenced my emotional opinion, which was super excited.*
- *My overall learning of accounting influenced how I felt e.g. if I didn't understand a section I didn't feel too good about myself. Or I'd feel smarter when I did understand.*
- *In any task, the outcome will determine your emotional views.*
- *Learning outcomes influences my emotional opinion due to what I have learnt and gathered from this study will impact my emotional opinion.*
- *If you had successful learning outcomes, you would feel emotionally better about the program and accounting.*
- *The program showed me that the learning outcome affected my emotional opinion. The*

program was effective and allowed me to develop my mindset into a determine one when it came to accounting. This resulted in a positive emotional opinion.

- *The outcome of my learning experience will determine my emotional state and opinion.*
- *Actually, understanding the concepts and getting activities correct helped in boosting my morale and motivated me more.*
- *Attempting the activities and gaining a more understanding helped motivate me.*
- *If my learning outcome was good, then I will feel good emotionally.*
- *The way you approach the activity and the effectiveness of it will influence how you feel and perceive yourself.*
- *As I have learnt a lot from this study, it has affected my emotional opinion positively.*
- *What I learnt will affect my emotional opinion. I had a positive emotional opinion.*

9.2.1.2 Learning Attributes (3→8)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 13) and Figure 11, the participants' experiences of how various learning outcomes influenced the learning attributes were described. Participants understood that their various learning outcomes influenced the learning attributes they acquired from tutorial programme. The results produced upon completion of the tutorial programme made the participants feel excited and confident in their ability to attempt Accounting 101 threshold concepts tutorial questions. Participants indicated that the tutorial attempts that they submitted allowed them to analyse the results obtained. This meant that the participants were able to engage with the demystified threshold concepts tutorial explanations in order to identify how to allocate their time and efforts going forward. For the aspects of the tutorial attempts where the participants had made mistakes, they understood that they had to direct their time and efforts to rectifying them, with the opposite applying to the aspects that they had excelled in.

Participants indicated that they achieved various learning outcomes throughout the tutorial programme due to the way they had engaged with the demystified threshold concepts tutorial questions and the explanations provided. This platform allowed them to develop the ability to confront learning challenges presented to them without fear of making mistakes as they were always assured by me that this was a platform designed for them to learn and deepen their understanding of the threshold concepts of the discipline. This deep understanding also allowed

participants to strengthen their knowledge of the discipline and therefore become extremely confident as they indicated that they developed the ability to learn new threshold concepts easily. Participants indicated that they knew their existing strengths and weaknesses and that the various learning outcomes acquired during the tutorial programme allowed them to not only improve on these, but also develop new learning attributes, for example, planning and budgeting skills, that they were excited to implement in the future. Below are descriptions provided by the participants for the relationship between the various learning outcomes and emotional responses.

- *Getting good grades made me feel confident and excited about accounting.*
- *The overall outcomes have improved my capabilities.*
- *The results that were produced made me confident and satisfied with my efforts.*
- *The way I understand accounting helped me attain the skills I would use in the future e.g. Able to budget better (planning skills).*
- *The outcomes will determine the skills you pick up from the task.*
- *What you have learnt will determine what attributes you have gained from learning.*
- *The positive learning outcomes allowed me to gain many attributes. For e.g. ability to tackle challenges, extreme level of confidence, and ability to learn new concept easily.*
- *I think that whatever you get as a result will help you grow in accounting… failure will make you grow, success will make you grow and by growing I essentially mean that you will gain attributes.*
- *I feel that as you learn and sharpen your skills you grow and this growth in turn influences your learning outcome either negatively or positively.*
- *If you are failing to grow…you are not gaining any attributes.*
- *The outcome of my learning experience will determine which attributes I have gained.*
- *When I improved on my attributes in this subject, I felt learning it became easier because I knew my strengths and weaknesses and could improve on them.*
- *Understanding concepts during tutorials really helped to strengthen my knowledge.*
- *If my learning outcome was high (I did learn a lot of things), then my attributes towards myself will be positive things because it did help me to grow.*
- *The results you get will make you grow. If it's wrong, you learn what not to do. If I get something right, I know what I know and do not need to spend a lot of time on that.*
- *If the outcome of the tutorial was good, it will affect my attributes.*

9.2.2 Learning Attributes

Table 14: Learning Attributes - Extract of Tabular IRD Sorted in Descending Order of Δ

	1	2	3	4	5	6	7	8	Out ↑	In ←	Δ
8	←	←	←	←	←	↑	↑		2	5	-3

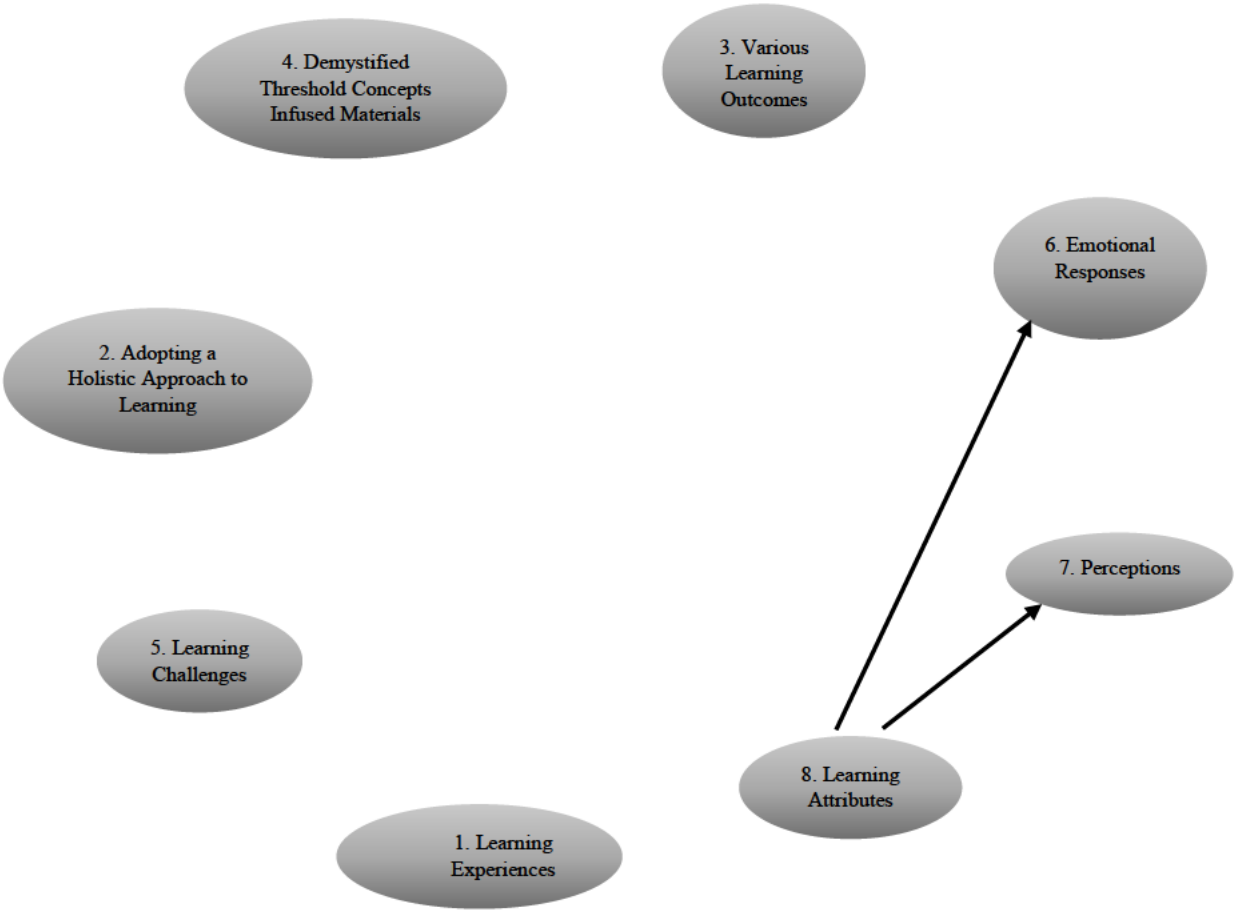

Figure 12: Learning Attributes - Extract of Cluttered SID

9.2.2.1 Emotional Responses (8→6)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 14) and Figure 12, the participants' experiences of how learning attributes influenced the emotional responses were described. Participants indicated that throughout their academic journey, prior to the commencement of the tutorial programme, they sometimes felt that the learning attributes they possessed for some disciplines and some topics within those disciplines were inadequate, while there were other disciplines and topics within those disciplines that they excelled in naturally. However, as they were determined to improve their learning attributes and therefore their emotional responses to themselves and their learning of the threshold concepts of the discipline of Accounting 101, they decided to take full advantage of the tutorial programme extended to them. Participants indicated that they strictly adhered to a newly adopted holistic approach to learning that they resonated with, and they asked for my assistance as often as they needed without hesitation as they felt that this platform was a safe space for them to grow.

Participants realised that if they persevered when faced with learning challenges, then the effort that they put in would result in them overcoming the learning challenges. They realised that when they engaged with the tutorial questions and explanations provided, they either improved upon or acquired new learning attributes, and this made them feel happier and more confident to continue learning in the tutorial programme. This confidence made participants feel less worried and less intimidated by the discipline in comparison to how they felt at the commencement of the tutorial programme. They became more positive about studying the threshold concepts of the discipline as they took stock of the learning attributes they had developed. These learning attributes acquired in the tutorial programme resulted in participants developing much improved emotional responses towards themselves and the discipline. They also perceived the threshold concepts tutorial programme to be beneficial to their academic and personal lives. Below are descriptions provided by the participants for the relationship between the learning attributes and emotional responses.

- *Having confidence made me less worried and more positive about studying accounting.*
- *When doing a tutorial and I have obtained or enhanced a skill, it will make me feel more confident and happier.*
- *Sometimes I feel that the attributes that I have is not enough in certain areas, what I have noticed is that there are areas and subjects that I am terrible in, and others that I*

naturally do well in.

- *In any task if you adopt a new skill, you will feel happy and satisfied.*
- *Attributes influence my emotional opinion because the skills I have acquired in this study will determine my opinion on the study. I have found this study beneficial.*
- *When I gained useful attributes from the program, I felt happier than I did before I started the program and gained these attributes.*
- *I feel that your gained attributes would boost your confidence and affect you in a positive way and not the other way around.*
- *Once my attributes started to improve, so did my opinion towards the subject as I felt less intimidated by it.*
- *I learned to compartmentalise.*
- *The type of person you and the things that you are good at will affect your emotional opinion. If you are good at accounting, then you will have a positive emotional opinion.*
- *I would not be able to gain good attributes if I did not follow the method of approach which included assistance from you. I've become more persistent in my work and I've realised the more I work the more I will get out.*

9.2.2.2 Perceptions (8→7)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 14) and Figure 12, the participants' experiences of how learning attributes influenced the perceptions were described. Participants understood that the learning experience they possessed for each topic in discipline, determined the level of confidence they experienced. Therefore, if a participant attempted and failed a tutorial question on a topic that they had limited experience in, then their personality influenced the way the threshold concepts of that topic was perceived. Participants were determined to resolve their failed attempts as they realised that if they developed more learning attributes, then their perception of the threshold concepts of the discipline would also develop into that of a better one, resulting in them acquiring a deeper understanding of the threshold concepts.

Participants therefore felt more optimistic about the tutorial programme as they realised that they had benefitted by acquiring more knowledge by interacting with a small cohort of participants and myself. They indicated that the learning attributes acquired in the tutorial

programme allowed them to perceive themselves as successful and being able to achieve their goal of passing the discipline. Below are descriptions provided by the participants for the relationship between the learning attributes and perceptions.

- *Having a better understanding of accounting made me think that I have a great possibility of passing the module.*
- *I am goal oriented which influences my views of how everything impacted my life. I am stable and I know what I want.*
- *Your attributes and skills determine your perception if you have the abilities and skills to attempt a certain question you will perceive it to be less difficult and easier.*
- *The person I am will affect the way I perceive things and concepts, either in a positive light or a negative light. For example, I keep trying even though I fail at something, so that give me a perception of go back this thing can be solved.*
- *Once you gain a new skill from doing your task, it can alter your perception of the task and vice versa.*
- *The more attributes I gained, the better my perception of accounting became.*
- *The attributes that you gained will determine how much you understood the concept.*
- *Once I noticed my attributes started to improve, my perceptions of the subject also did as I felt it became easier for me. I saw accounting in a more positive light.*
- *I was really optimistic and felt that this process would be helpful. I gained a lot of understanding and just self-discipline.*
- *I have gained a lot more knowledge from this experience and learning to work with others.*
- *E.g. My skills will influence my perception. If I have experience in a section, I will be more confident compared to a section I have not done before.*

9.3 Primary Outcomes

9.3.1 Emotional Responses

Table 15: Emotional Responses - Extract of Tabular IRD Sorted in Descending Order of Δ

	1	2	3	4	5	6	7	8	Out ↑	In ←	Δ
6	←	←	←	←	←		↑	←	1	6	-5

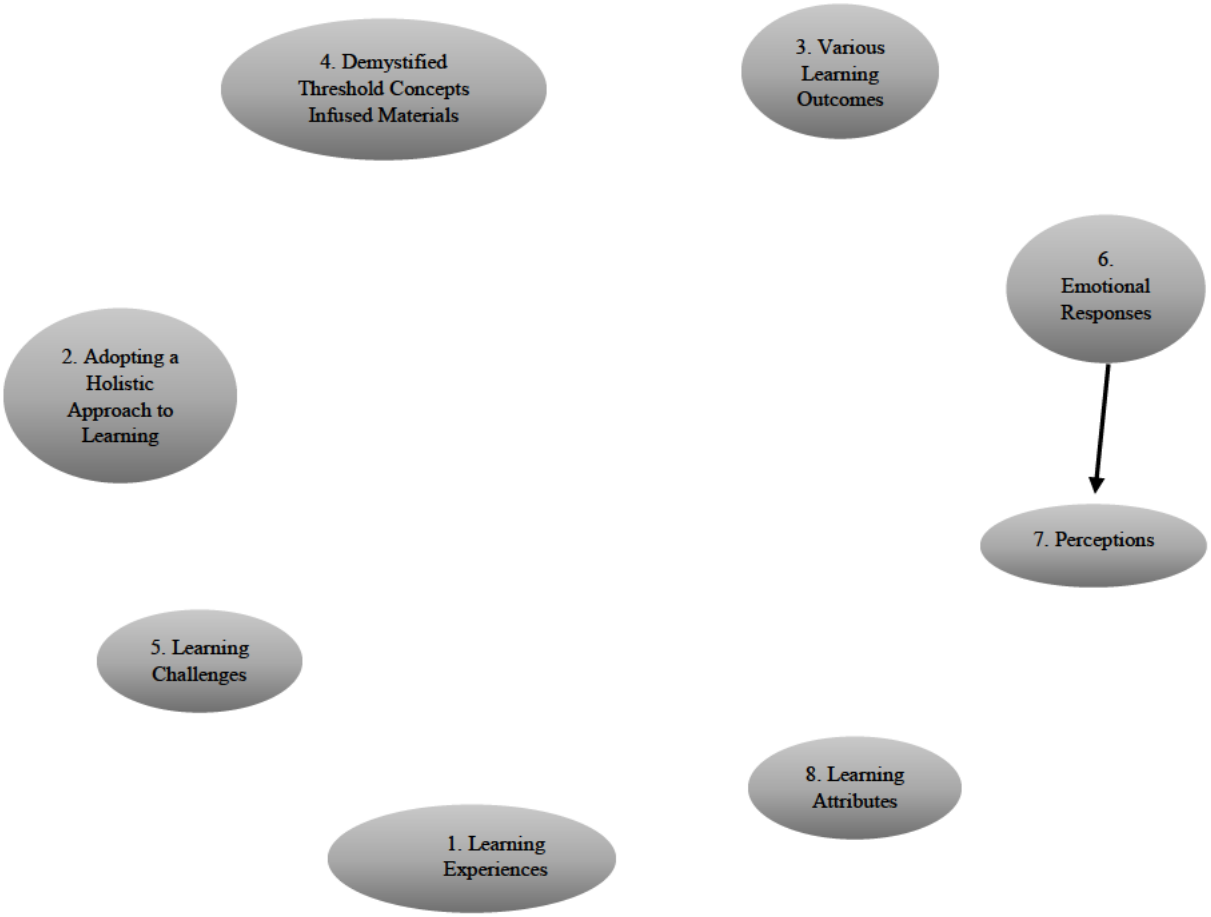

Figure 13: Emotional Responses - Extract of Cluttered SID

9.3.1.1 Perceptions (6→7)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 15) and Figure 13, the participants' experiences of how emotional responses influenced the perceptions were described. Participants understood that their emotional responses influenced how they perceived themselves and the discipline throughout the threshold concepts journey. They realised that their emotions determined the way in which they perceived everything. Therefore, when they felt negative, they did not want to engage, and when they felt positive, they were driven to perform well. Participants indicated that if they were not confident when approaching a tutorial question, then this apprehension would influence how they perceived the tutorial question and their ability to complete it. Once participants did feel more confident in their ability to approach the learning challenges in the tutorial question, then their perception of the topic and threshold concepts of the discipline as a whole changed for the better. Participants indicated that when interacting with me throughout the tutorial programme, they felt calmer and happier and that this interaction also positively influenced their perception. They realised that as they felt more positive, they became more confident when engaging with the threshold concepts tutorial questions, and their overall perception of the discipline and themselves was therefore positive too. Below are descriptions provided by the participants for the relationship between the emotional responses and perceptions.

- *My feeling throughout the tutorship of Ms. Sasha has made me happy and influenced my view for the better.*
- *My opinion has shown how I felt throughout the journey under the tutorial.*
- *If I'm not confident, it will affect how I perceive the tutorial and if I can complete it.*
- *If you feel good about accounting, then you will have a better perception of it.*
- *How positive my emotional opinion was towards the programs, resulted in my overall perception. With positive emotional opinion towards the accounting program, it resulted in growth in confidence in my perception in the subject and of myself.*
- *If I am emotionally calm, then I will have a better chance of understanding the concepts.*
- *Once I felt more confident in the topic and subject as a whole, my perception towards it changed for the better.*
- *I feel like my emotions really drove the way I perceived everything. When I was feeling negative, I didn't want to engage and when I am feeling positive, there is a drive to do better.*

9.3.2 Perceptions

Table 16: Perceptions - Extract of Tabular IRD Sorted in Descending Order of Δ

	1	2	3	4	5	6	7	8	Out ↑	In ←	Δ
7	←	←	↑	←	←	←		←	1	6	-5

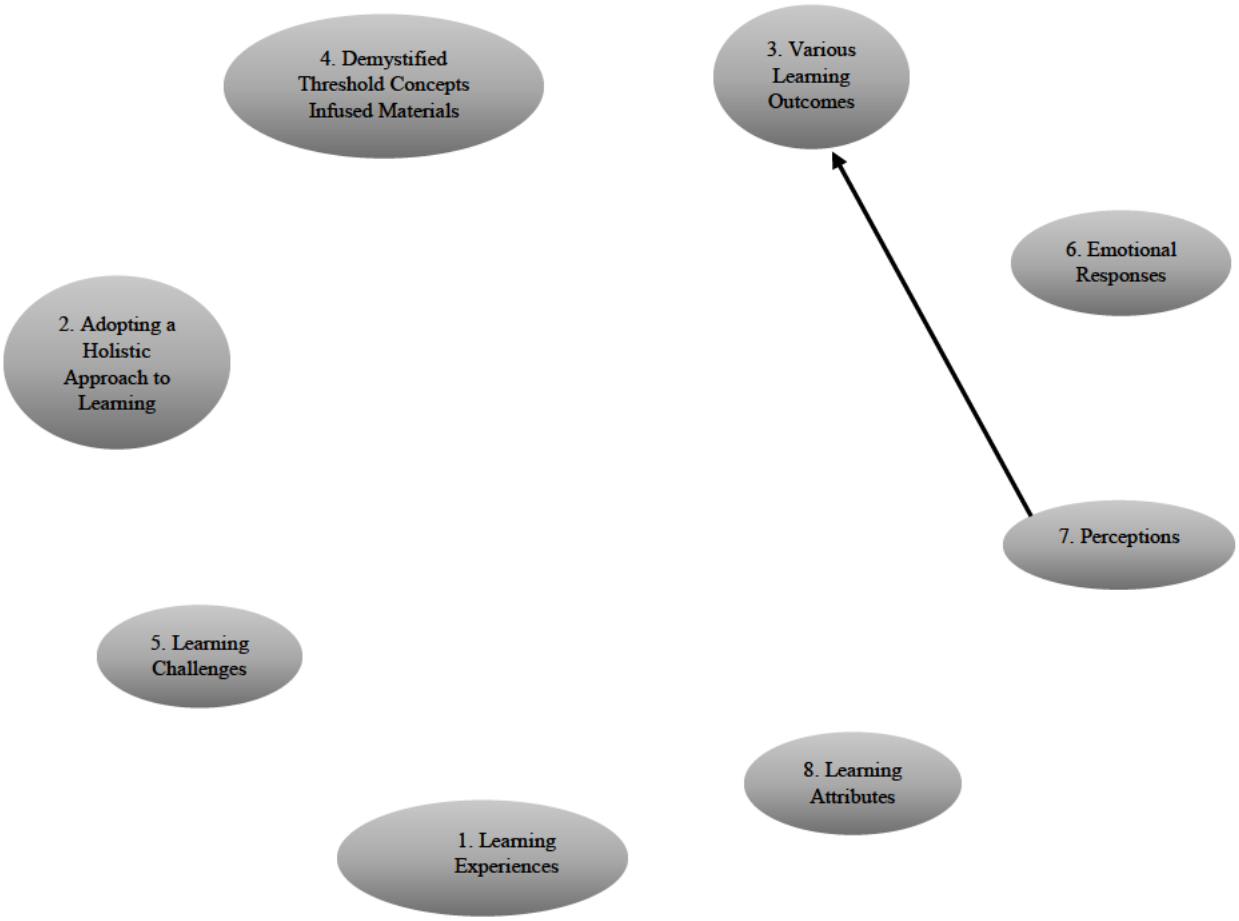

Figure 14: Perceptions - Extract of Cluttered SID

9.3.2.1 Various Learning Outcomes (7→3)

As per the Extract of Tabular IRD Sorted in Descending Order of Δ (Table 16) and Figure 14, the participants' experiences of how perceptions influenced the various learning outcomes were described. Participants understood that the way in which they perceived the threshold concepts tutorial questions would influence the way in which they would answer the tutorial questions and therefore the outcome of their learning of the topic. They indicated that if they perceived a threshold concepts tutorial question to be challenging, then their various learning outcomes would be limited as their understanding of the topic would be limited too. If, however, participants perceived a threshold concepts tutorial question to be less challenging, then their various learning outcomes would be productive as they felt confident enough to attempt the tutorial question and engage with it until they had fully understood it. This meant that the way in which the participants interpreted and understood the threshold concepts tutorial questions influenced what their various learning outcomes would be.

Participants indicated that they perceived the threshold concepts of the discipline in an optimistic way as they either improved their understanding of or acquired a full understanding of these threshold concepts. This understanding motivated them to remain focused and therefore work harder on producing various positive learning outcomes. Below are descriptions provided by the participants for the relationship between the perceptions and various learning outcomes.

- *My perception of the tutorial will affect the outcome; if I struggle with a certain tutorial or find it difficult, it will affect my understanding as I perceive it to be difficult to understand it, whereas if I found it less difficult, it I would most likely attempt and work with it till I understand it.*
- *The way I perceive a question will affect the way I answer and the outcome of what I learnt.*
- *Perceptions influences my learning outcome because the way in interpret and understand the work, impacts what I learnt and take away from this study.*
- *If you perceive a module in an optimistic way, then the learning outcome are said to be good.*
- *If I understand the tutorial, then I will have a good learning outcome.*
- *Once my perception of the subject changed as I started to understand it more - which*

helped me learn it better.

- *I believe in being positive, having that positive energy helped a lot in staying focused.*
- *I think being optimistic really helped in staying focused.*
- *E.g. My perception influenced my learning outcomes. With determination and hard work my learning outcome has been pretty good.*

9.4 Conclusion

This chapter allowed me to conduct an analysis of the affinity pair relationships identified by using the Pareto Protocol and Power. This analysis was based on the detailed explanations of each affinity pair relationship identified by the participants for the secondary and primary outcomes of the study. These explanations provided me with a more holistic view from the participants regarding their experiences of learning Accounting 101 in a threshold concepts tutorial programme, which overall proved to be beneficial in nature to them. The chapter that follows offers an analysis of the threshold concepts tutorial programme and the fundamental issues that arose from it.

CHAPTER TEN

THRESHOLD CONCEPTS FOR ACCOUNTING 101 AND THE TUTORIAL PROGRAMME FOR ACCOUNTING 101

10.1 Introduction

This chapter commences with a description of the holistic method of approach adopted by this study, followed by an analysis of the threshold concepts tutorial programme. The affinities generated in Phase One of the Interactive Qualitative Analysis (IQA) methodology were utilised to conduct the analysis from the commencement to the completion of the programme.

10.2 Adopting a Holistic Approach to Learning

Upon the commencement of the lockdown in South Africa due to the COVID-19 pandemic, the discipline experts at my chosen university in Kwa-Zulu Natal were instructed to make lecture slides and tutorial questions and solutions available to students on a weekly basis so that the students could try to study at their respective homes. The participants indicated that despite the learning challenges presented by COVID-19, they had the intention of keeping up to date with the resources that their Accounting 101 discipline experts uploaded onto Moodle, their online learning site, as well as participating in the study until their online learning programme commenced on 1 June 2020.

The study required the administration of an additional tutorial programme with the participants upon the completion of their weekly lectures and weekly mainstream tutorials. As these participants were motivated to keep up to date with their Accounting 101 syllabus, with me as their personal guide, I used this motivation as another opportunity given the already challenging method of approach, to encourage them to engage with the online resources made available on a weekly basis, in order for them to complete the tutorial programme tasks. This section describes one of the affinities identified in the Interactive Qualitative Analysis (IQA) methodology, that of a newly *adopted holistic approach to learning*. The holistic method of approach adopted by this study is outlined in this section. This in turn impacted on the newly

adopted holistic approach to learning by the participants throughout the tutorial programme.

10.2.1 Threshold Concepts for Accounting 101

The second title that the Threshold Concepts Theory carried (Meyer et al., 2010, p. 21) was 'tc'. This title was seen to be the "content of a discipline" "that poses deep challenges to a learner". This title, 'tc', implied that the conceptual framework for any discipline comprised of learning outcomes of a discipline that possessed the seven characteristics of the Threshold Concept Theory.

The reason the identification of threshold concepts was considered to be difficult and laborious, is that the threshold concept "lies in the eyes of the beholder" (Decker, 2006, p. 30). As with that of 'loaded knowledge', the newest type of troublesome knowledge identified, the identification of a threshold concept will differ from discipline expert to discipline expert when it conflicted with a perspective that one felt strongly about (Meyer et al., 2010). Due to the fact that there were limited Accounting 101 studies with identified threshold concepts, because of these conflicting perspectives amongst discipline experts, the method of approach adopted by the study was to follow the path of those researchers who have taken it upon themselves to identify the threshold concepts in their chosen disciplines (Khan, 2014).

The Coordinator of the Accounting 101 discipline also granted me permission to liaise with their Professional Services Staff in order to acquire any administrative documents that were needed during the data collection period. A copy of the prescribed textbook and the Course Outline (see Annexure 19) were requested in order to determine which discipline topics from the textbook were to be taught in the first semester. Once these topics and chapters from the textbook were identified, I then referred to the learning outcomes of each topic in conjunction with the Threshold Concepts Theory, in order to determine what I deemed to be the threshold concepts of the Accounting 101 discipline. This process also proved to be difficult and laborious as there were pages of learning outcomes to consider in the analysis. To the best of my ability, I decided on the following as the threshold concepts for Accounting 101 in the first semester:

- The accounting equation: Assets = Equity + Liabilities
- Every debit has an equal but opposite credit
- The cash basis of accounting
- The accrual basis of accounting
- Understanding adjusting journal entries
- Preparing a bank reconciliation statement
- Preparing a creditors reconciliation statement
- Preparing a remittance advice
- Recording VAT – Which amounts include/ exclude VAT?
- Recording VAT – When is VAT an asset/ liability?
- Redeemable Cumulative Preference Shares repayable at a specified date vs Loan

After this analysis, I proceeded to create tutorial questions that incorporated these threshold concepts for the participants to attempt. These tutorial attempts, in conjunction with the participants' reflective learning journals, assisted me to understand how they learned these threshold concepts in a tutorial programme.

10.2.2 The Threshold Concepts Tutorial Programme for Accounting 101

"Pardon me. But would you mind helping me please?"

(Carroll, 1951, 11:38)

The aim of this research study was to utilise the Threshold Concepts Theory in a tutorial programme with a focus group of Accounting 101 participants in order for them to obtain a privileged perception of the discipline content (Meyer & Land, 2006). A group of discipline experts in the field of economics at Staffordshire University were the first to undertake a project, the Embedding Threshold Concepts (ETC) Project, aimed at creating a set of tutorial questions that incorporated threshold concepts. This project utilised scenarios from everyday life in order to determine whether a student's thinking had transformed to that of an economist (Meyer & Land, 2006). This practice-theory connection expanded to a practice-theory-practice connection (Hedges, 2014) that allowed students to draw on their familiar practical experiences and the newly-introduced theoretical knowledge of a discipline. Thereafter, students developed their own meaning of the theoretical knowledge in order to understand the new practical aspects of the discipline being learned (Miley, 2005).

An in-depth search for tutorial questions that incorporated Accounting 101 threshold concepts as well as those for other disciplines was conducted, and none have been found to date. Hence the ETC project was utilised as a basis for creating tutorial questions for this study, specific to the discipline of Accounting 101 and incorporated what I deemed to be Accounting 101 threshold concepts. The tutorial questions also made use of everyday life scenarios to determine if the participants' thinking had transformed, resulting in them thinking like an accountant when faced with these everyday life accounting problems. As the data collection part of the study was redesigned to be conducted during an uncertain time, not using the conventional face-to-face protocol, the students who volunteered to participate did so because of their own self-motivation. This study therefore designed and administered the tutorial programme in the most user-friendly approach possible, in order to promote an environment of continuous self-motivation. A study conducted with students who engaged in a programme designed to improve hope and self-efficacy, resulted in an improvement in student results (Davidson et al., 2012). The result of the study by Davidson et al. in 2012, was a further hope for this study as it investigated how the participants learned in a threshold concepts tutorial programme.

Researchers have acknowledged the need for accounting discipline experts to employ innovative methods of assessment that not only confronted the negative preconceptions of the discipline, but also promoted an environment that allowed students to develop the ability to interact with people and data in order for them to achieve academic success (McGuigan & Kern, 2010). The innovation that this study has offered when designing the tutorial questions, was the amalgamation of the ETC practice-theory connection, in addition to the practice-theory-practice connection (Hedges, 2014), with the purpose of a fairy tale (Miley, 2005), in addition to the continued use of an actual fairy tale throughout the study, that of *Alice in Wonderland*. Stories or fairy tales date back to primitive times and have been used as a method to communicate two levels of meaning: the first, that of a superficial level of meaning, is the actual story told; with the second, that of a deeper level of meaning that provided the recipient with the understanding the fairy tale was supposed to convey without actually being conveyed. This therefore meant that if the fairy tale has been told appropriately, regarding its purpose, the recipient will be able to implicitly understand the second level of meaning (Miley, 2005).

"And what is the use of a book" thought Alice,
"without pictures or conversation?"
(Carroll, 1951, 2:53)

As the participants were introduced to study materials that incorporated a pedagogic tool, the Threshold Concepts Theory, that had never been used in the discipline of Accounting 101 before, the study elected to use questions that were familiar in nature to the participants. Questions from the prescribed textbook were adapted in order to provide a level of familiarity to the participants when approaching the new and unfamiliar threshold concepts of the discipline (see Annexure 20), much like that from the study by Miley in 2005. This textbook provided students studying towards a major in accounting with a good foundation in this introductory accounting course. It also provided students who were not majoring in accounting with the skills to be financially competent. This study resonated with the design of this textbook as it also provided students with a story in order to teach them accounting. I decided to continue with the use of my chosen story or fairy tale in the tutorial questions. This time, instead of using Alice, I used another character from the fairy tale, the White Rabbit, and the everyday life interpretation of this character.

As I have two pet-rabbits of my own, I used them as the characters of the story-oriented tutorials, with scenarios from everyday life, in order to teach the participants Accounting 101 threshold concepts. This design was an innovative and appropriate enough method of assessment that would allow for a smoother transition with something familiar, *Alice in Wonderland* and rabbits, towards something unfamiliar that participants already possessed negative preconceptions about, Accounting 101. The everyday life stories about rabbits were a method of assessment used to communicate two levels of meaning to the participants. The first level of meaning was the superficial level, that told a story about rabbits in an everyday life scenario, and the second level of meaning was the deeper level, that provided the participants with the understanding as to which concepts were accounting threshold concepts. Therefore, if the tutorial questions are designed appropriately, regarding the intended purpose, the participants should be able to grasp the deeper level of meaning.

Each tutorial question was designed by looking for a comprehensive example from the textbook relevant to what I deemed to be a threshold concept. The type of comprehensive example used was brief and specific to the particular threshold concept being articulated. Once the comprehensive example was selected, it was adapted based on the characters chosen to include in the story-oriented everyday life tutorial question scenario. The first part of the tutorial question had the adapted comprehensive example, followed by the requirements of the tutorial question. These two parts, the question and the requirements of the tutorial question, were given to the participants after they had engaged with the online resources made available on a weekly basis, in order for them to attempt the tutorial programme tasks. Once the participants returned their tutorial attempts via WhatsApp Messenger using the online platforms discussed in Chapter Five, they were then given the entire tutorial so that they could take charge of their learning by reviewing their work. In addition to the question and requirements of the tutorial question, the entire tutorial question also included a solution. This solution was supplemented with a detailed accounting explanation immediately afterwards, that was typed in a user-friendly bullet format, with short sentences for ease of reading and understanding. The next part of the entire tutorial question included a question prompt that asked if the participant identified the threshold concepts relevant to the tutorial question, with the options of 'Yes', 'No' or 'Almost'. This question prompt was followed by a detailed explanation as to why I deemed the particular threshold concept in the relevant tutorial question to be one. The structure of the threshold concepts explanation utilised the characteristics of the Threshold Concept Theory and an explanation per characteristic as to why I deemed the particular concept to be threshold in nature.

There have been concerns regarding the approach used to introduce threshold concepts to students for the first time, and that a simplified version of articulating these threshold concepts may result in students grasping the concept as a "ritualised" form of knowledge, thus creating a barrier to student understanding (Meyer & Land, 2006, p. 100). Being cognisant of this speculation, it was ensured that a threshold concept was only introduced upon the completion of a tutorial attempt and not at the outset. The explanation given to the participants of a threshold concept had as much detail as possible so as to provide a clear understanding. Once the participants had completed each part of the entire tutorial question, they were then encouraged to ask me, on their individual WhatsApp Messenger chats, for any further clarity they may have needed. Thereafter, the participants were allowed to reattempt the tutorial question. I felt that this threshold concepts tutorial design led to a deeper understanding and

allowed participants to progress through the liminal journey and therefore master the discipline (Cronin, 2012). The threshold concepts tutorial questions, and the demystified design that offered the detailed accounting and detailed threshold concepts explanations, supplemented the mainstream lectures and tutorials during the COVID-19 pandemic, and appeared to be useful to the participants.

10.3 Perceptions

10.3.1 Tutorial Attempts Overview

The threshold concepts tutorial programme commenced on 13 April 2020 after a strong commitment was received from the interested students who were willing to participate in the study during the COVID-19 pandemic. A WhatsApp Messenger group chat was utilised to send the participants their first threshold concepts tutorial question and the requirements of the tutorial question. I offered to record the tutorial question explanations and to host tutorial sessions on Zoom, Loom or Skype, for example, but this was rejected due to the high cellular telephone data cost. Participants were asked to diarise their learning journey in the tutorial programme in the form of a reflective learning journal. Question prompts that the participants were to also use later in Phase One of the Interactive Qualitative Analysis (IQA), were sent to the WhatsApp Messenger group chat for the participants to use as a suggested guide when completing their reflective learning journals. The participants did not find these prompts to be useful to complete their reflective learning journals, but they instead found that it would be more productive to answer these questions prompts upon completion of the tutorial programme. Therefore, these question prompts were utilised later, only during Phase One of the IQA part of the study. Further questions were immediately designed to assist the participants when diarising their learning journey. The following suggested question prompts were sent to the WhatsApp Messenger group chat for the participants to complete for each of the tutorial questions attempted (see Annexure 21):

Question 1. How did you perform in the tutorial?

Question 2. Comment on the identification of the threshold concepts.

Question 3. Did the threshold concepts explanation help you to learn anything?

Question 4. Is there anything else you might want to add😊?

In order to create a comfortable online learning environment for the participants, I decided to send the group a 'Getting to Know Me' message in response to the introductory document that they were asked to complete, the 'Getting to Know You' document. The message explained the background of the study, my passion for non-major accounting students and their learning of Accounting 101, and pictures of the study's muses, my two rabbits, Sweety and Bubbles, who were the characters in the threshold concepts tutorial questions. The group chat was also utilised for planning purposes, to send occasional COVID-19 information, as well motivational messages as the participants completed their tutorials. As none of the participants were from the discipline of linguistics, there was also the apprehension that they may struggle to articulate their explanations provided as deeply as required.

During the Interactive Qualitative Analysis (IQA) interview, the participants were asked about their experiences with their data, their signal from their respective service providers, their devices used, their study environment and the time they studied. Of the sixteen participants interviewed, all had either cellular telephone data or Wi-Fi data. However, one participant indicated that his data was consumed quickly and was expensive to purchase; another indicated that she did not have access to enough data; and a third participant indicated that even though he had monthly data, that when it expired, it posed a problem. The university that the participants studied at instructed them to use an application called GlobalProtect when accessing their university's online learning management system, as this application provided each participant with limited complimentary gigabytes. Of the sixteen participants interviewed, three indicated that the signal from their respective service providers was bad, poor, or temperamental, but that they tried their best in spite of this online learning challenge. Thus, all sixteen participants who were interviewed, had a device to work from. The majority of the participants indicated that they used a laptop when studying, with two indicating that they shared this device with their siblings who lived in the same household. Two participants indicated that they used their cellular telephones as they did not have a laptop or iPad and that they preferred using their cellular telephones. Of the sixteen participants interviewed, all indicated that they had an environment free of distractions, and families who accommodated their studying. Three participants indicated that they preferred to study early in the morning, on average from 7am to 3pm. The remaining thirteen participants indicated that they preferred to study late at night, on average from 3pm to 7am. Some of the reasons given were that they were not morning people, and they found it to be quieter at this time in comparison to the distractions throughout the day and that this was a better time for retention of discipline content

learned. One of the participants indicated that he was an artist, and played drums during the day. As such, the majority of the participants utilised their night time cellular telephone data when sending their tutorial attempts to me as this was cost-effective for them. Based on the average times mentioned, I indicated that I would be available 24 hours a day for the seven-week duration of the data collection period, in order to be as effective and as efficient as possible during this limited time period, as participants had their own schedules, which I happily accommodated. Next are descriptions provided by the participants about their experience with their data, their signal from their respective service providers, their devices used, their study environment and the time they studied.

- *I have data and good reception. I use the global protective app that campus asked us to use and it works well. Yes, I do have a laptop. Yes, I do have a quiet place to study. Night time, I'm not a morning person.*
- *Yes. No, I do have a laptop, but it does give me a lot of issues. I mostly use my phone. Yes, I have a desk set up. Early morning or late at night. (6PM-10PM). It's quiet.*
- *Network signal is not a problem; however, data gets finished quickly and is expensive. I have a laptop that I share with my brother. Yes, I have a study table in my room upstairs, downstairs is noisy, therefore I go upstairs and close the door. Night because it stays in my head the next day.*
- *Yes. Yes. Yes. Night. From midnight until 7am.*
- *I have for most of lockdown. However, now I'm using data as my Wi-Fi crashed. Yes, phone, laptop and iPad. Yes. Afternoon to night because I have a lot more time to myself and my sibling would be playing in his room. It's a lot more private time for myself to study.*
- *The signal is bad but I do have access to data. I do have a laptop. Yes, a table set up in my room. The evening due to fewer distractions.*
- *Yes. Yes, I use my sisters. Yes, however I do have siblings, but they do accommodate me when I have work to do. I work better in the morning. I wake up at 7am and finish my work before 12:00; however, during the lockdown I work until 3pm.*
- *Yes, I did. Yes, I do. Yes, I do. At night. It's quiet and I can pay attention.*
- *Yes, I have Wi-Fi. Yes, I have a laptop. Yes, I have my own room. Around 3pm. It quiet during this time.*
- *I didn't have access to enough data and the network is poor, but I try my best. Yes, I do*

have a laptop. The environment is good, I'm alone, there isn't anyone disturbing me. Midday. From the morning to 3pm.

- *Yes, I do. Yes, I do. Yes. I do have a good study environment. In the evening, since it is less busy.*
- *Yes, I do. Yes, I do. Yes, I have my own desk and space. Throughout the day, I relax at night.*
- *Yes. Yes. Yes, I have my own room. Evening, I'm an artist (play drums) and therefore have no time during the day.*
- *I have monthly data, that does expire and then it's a problem. I do not currently have a laptop. Mine fell. Yes, it's a good environment. It's in my room. Between 00:00 and 07:00.*
- *Yes, I did. Yes, I did. Yes, I did. At night.*
- *Telkom network is not very good, it works and then stops working at any time. With regards to data, I did not have any issues. Yes, I do have access to a laptop. Yes, I do. There isn't much distractions. Around 3pm-5pm. It was quieter during this time.*

This section describes one of the affinities identified in the Interactive Qualitative Analysis (IQA) methodology, that of *perceptions*. The perceptions the participants had of themselves throughout the tutorial programme are documented in this chapter using the responses to the first and last questions of the reflective learning journal for each tutorial question attempted:

Question 1. How did you perform in the tutorial?
Question 4. Is there anything else you might want to add😊?

10.3.2 Reflective Learning Journals (Perceptions of the Tutorial Attempts)

10.3.2.1 Perceptions (Tutorial 1 Attempts)

Question 1: How did you perform in the tutorial?

For question 1 of the reflective learning journal, half of the participants indicated that their tutorial 1 attempts were excellent, as they perceived this tutorial question to be very short and the easiest to complete. They also found this tutorial question to be the most easily understood, without any challenging aspects to it. The other half of the participants indicated that their

tutorial 1 attempts were relatively good despite their lack of accounting skills. Upon analysis, participants attributed this average attempt to the one or two errors made, as they failed to fully understand the tutorial question and requirements of the tutorial question. They also experienced minor misunderstandings, or encountered a few learning challenges when identifying accounts. Other participants indicated that due to their lack of understanding of some of the threshold concepts in the tutorial, they were confused and therefore not fully confident when attempting the tutorial question, and hence they did not perform as well as they had anticipated. However, after they had referred to the demystified threshold concepts explanations provided, participants were able to rectify their errors made and therefore achieve a much better result when attempting the tutorial question for a second time. Below are descriptions provided by the participants for question 1 of the reflective learning journal, being 'How did you perform in the tutorial?'

- *Excellent.*
- *I found tutorial 1 to be the easiest and comprehensible, there was no difficulties in it.*
- *My performance was good.*
- *Good.*
- *I performed good.*
- *I performed well because it was easy and very short.*
- *I understood the tutorial and was able to complete it.*
- *I performed well, with only 1 or 2 errors.*
- *Fairly well. There was one error made.*
- *Performed okay on the tutorial. Little misunderstanding but okay.*
- *Relatively good just had a few problems with identifying accounts.*
- *Relatively good. I knew the basic concepts but I think the way I did it was wrong and I failed to read the question properly.*
- *For the journal entry, I completed it and felt that it was manageable even though I had no accounting skills.*
- *I understood concepts but due to my lack of understanding of the profit calculation accrual basis I did not perform as well as hoped.*
- *In this tutorial, I performed at an average level as I was not confident in my answers due to not knowing certain concepts. Although, after viewing my errors and understanding when and why we use "Trade Receivables" by referring to the threshold*

concepts explanation; my second attempt at this tutorial was of a better result.

- *I performed okay. I did get confused at first, but the accounting explanation helped me put things together.*

Question 4: Is there anything else you might want to add😊?

For question 4 of the reflective learning journal, participants indicated that they did not know what the broad terms and abbreviations meant as they did not study accounting in their schooling careers. Participants were also confident enough to highlight their errors made when reviewing their tutorial attempts as this allowed them to not repeat this mistake going forward. They indicated their pace with regard to their learning of the threshold concepts of the discipline at this early stage in the programme, and appeared to be keen to progress in their learning journey. Participants indicated that they had fully understood the threshold concepts being tested in the tutorial question as the threshold concepts explanations had eliminated all of their doubts. They expressed their gratitude for my assistance thus far and for introducing them to the Threshold Concepts Theory, and they further indicated that they had a great learning experience and that they wanted more threshold concepts tutorial questions, as they would love to learn more about them. Below are descriptions provided by the participants in response to question 4 of the reflective learning journal, 'Is there anything else you might want to add😊?'

- *I had a mistake when I was reading the question and that resulted to me writing 600 instead of writing 1 200 because the rabbits were R600 each.*
- *More exercises like these to further understand and develop the skills learnt, would be appreciated.*
- *Slowly trying to learn and adapt this concept and include it in my learning.*
- *No, the concept has covered most of my doubts.*
- *Thank you so much for assisting us and introducing the Threshold Concepts.*
- *I fully understood the accounting equation and that the debit side of the journal must equal the credit side.*
- *Oh yes, I want you to know that I may not understand the broad terms and the abbreviations since I didn't do Accounting in my high school senior phase.*
- *It was a great learning experience and I'd love to learn more threshold concepts.*

10.3.2.2 Perceptions (Tutorial 2 Attempts)

Question 1: How did you perform in the tutorial?

For question 1 of the reflective learning journal, half of the participants indicated that their tutorial 2 attempts were good, as they perceived this tutorial question to be fully understood after engaging with the lecture content. Participants were pleasantly surprised with their performance considering that they were introduced to this threshold concept for the first time. Despite participants performing well, they expressed their discomfort as they knew that the threshold concepts in this discipline would become more challenging as the tutorial programme progressed. Other participants indicated that even though they had experienced relatively small difficulties with this tutorial question, they were still very happy with their excellent performance and focused on their accomplishments. The other half of the participants indicated that the threshold concepts being tested were almost fully understood. Participants experienced this tutorial question as a learning challenge as this was an unfamiliar topic to them. However, once they had read the textbook and lecture content provided, they felt more comfortable to attempt the tutorial question and therefore performed much better than they expected to. Even though participants had a basic understanding of the concepts, a few of them were confused as they failed to understand the requirements of the question fully. While they made a few mistakes, these were rectified by reading the textbook and the demystified threshold concepts explanations provided. Below are descriptions provided by the participants for question 1 of the reflective learning journal, 'How did you perform in the tutorial?'

- *Performed well in the tutorial.*
- *Good. I fully understood the question.*
- *Good.*
- *I performed relatively well considering it was the first time I was introduced to this section.*
- *I think I am performing well, but at the same time I know that accounting will get harder and trickier. So I am not comfortable.*
- *I performed well, although there are those small hindrance but nonetheless I did very well.*
- *I performed well in the tutorial because I referred to the book.*
- *Moderate.*
- *Concepts were almost fully understood - however, I had difficulty understanding the*

difference between Cash and Accrual Basis Calculations.

- *Doing profit calculations confused me a lot but I used the textbook to help me. I looked up examples and it helped with doing the tutorial.*
- *This tutorial was a bit of a challenge as I was not familiar in this section, hence I had to read up on this section before attempting. My attempt was of a better result than I expected. I did stumble upon a few errors, but it was cleared up after I corrected them.*
- *Relatively good. I knew the basic concepts but I think the way I did it was wrong and I failed to read the question properly.*
- *I misunderstood the method, but after attempting it and considering the solution, I was able to understand.*
- *My performance was bad.*
- *I did not perform my best in this tutorial. I was very confused and did not understand how to go about answering the question, but the accounting explanation helped me put things together.*

Question 4: Is there anything else you might want to add😊?

For question 4 of the reflective learning journal, participants indicated that they wished that the threshold concepts tutorial programme could have been implemented while they were studying Accounting 101, in conjunction with the mainstream lecture programme, as opposed to it being conducted while they were in quarantine and self-studying from their respective homes. Participants expressed their gratitude for my assistance in this tutorial question and for introducing them to the Threshold Concepts Theory, and they further indicated that they had an enjoyable learning experience so far, as they had learned the relevant threshold concepts from this tutorial question. Below are descriptions provided by the participants for question 4 of the reflective learning journal, 'Is there anything else you might want to add😊?'

- *Kinda wish these could have been done during the semester and with the syllabus and not during quarantine where we're kind self-studying at home.*
- *Thank you so much for assisting us and introducing the Threshold Concepts.*
- *I enjoyed learning the threshold concepts. I've learnt how to calculate profit/loss.*

10.3.2.3 Perceptions (Tutorial 3 Attempts)

Question 1: How did you perform in the tutorial?

For question 1 of the reflective learning journal, half of the participants indicated that they performed well in this tutorial question as they understood most of the transactions provided. A few participants, however, indicated that they did not perform as well as they expected to in this tutorial question as they did not completely understand the topic and therefore made mistakes and realised that they needed to practise this topic a bit more. A few of the other participants indicated that they performed relatively well in this tutorial question as most of the concepts were understood. Participants indicated that this tutorial question was manageable, despite the minor learning challenges encountered as they experienced difficulty with a few of the transactions and had miscalculations that were independent of their understanding of the threshold concepts being tested. After engaging with the demystified threshold concepts explanations provided, participants were better equipped to identify the threshold concepts being tested, and their knowledge and understanding of the tutorial question improved substantially when they attempted the tutorial question for the second time. Below are descriptions provided by the participants for question 1 of the reflective learning journal, 'How did you perform in the tutorial?'

- *I did well.*
- *I performed well in the tutorial.*
- *I performed good.*
- *Good.*
- *Performed well on the tutorial.*
- *Fairly good.*
- *I understood most of the transactions.*
- *I don't think I performed very well. Definitely need to practice more.*
- *Poorly, I did not have one correct account.*
- *Preparing journal entries into the transactions was a bit of a struggle because I did not completely understand the topic.*
- *Many mistakes.*
- *Not great.*
- *I performed okay. No answer was incredibly wrong.*

- *Most concepts were understood, with the errors being due to miscalculations. 65% of the work was correct.*
- *This one was bit challenging and tricky too but it is manageable.*
- *I performed much better in this tutorial than the previous one. I did get stuck with a few transactions but looking through the accounting explanations I've understood the transactions better.*
- *In this tutorial, I did not perform well as I was not good at identifying adjusting journals. My knowledge span on this section was unfortunately limited. Although after viewing my weak areas and reading up on the explanation, my second attempt in this tutorial was a success.*

Question 4: Is there anything else you might want to add😊?

For question 4 of the reflective learning journal, participants indicated that even though this particular threshold concepts tutorial question was difficult in nature, they still perceived trying to attempt this topic as a great experience. They also realised that each participant's newly adopted holistic approach to learning when confronted with a tutorial question was different, and that they needed to improve their approach to learning when articulating the threshold concepts explanations on paper. Participants also indicated that more threshold concepts tutorial questions would be highly appreciated in order for them to deepen their understanding of the threshold concepts being tested, and further develop the skills that they had acquired. They expressed their gratitude for my assistance in this tutorial question and for introducing them to the Threshold Concepts Theory. Below are descriptions provided by the participants for question 4 of the reflective learning journal, 'Is there anything else you might want to add😊?'

- *More exercises like these to further understand and develop the skills learnt, would be appreciated.*
- *I think students learn in different ways, and with the threshold concepts I definitely need to sharpen the way in interact with explanations on paper.*
- *Thank you so much for assisting us and introducing the Threshold Concepts.*
- *It was good trying to learn the threshold concepts of a journal entry. It was difficult but I tried. A great experience.*

10.3.2.4 Perceptions (Tutorial 4 Attempts)

Question 1: How did you perform in the tutorial?

For question 1 of the reflective learning journal, more than half of the participants indicated that they performed really well in this tutorial question, with some participants who had thought they had "crushed it" by answering the question perfectly. Participants indicated that they fully understood the tutorial question and the requirements of the question and were confident about how to respond to this threshold concept. One participant indicated that his prior knowledge of this topic assisted him when responding to the threshold concept being tested, and that this proved to be an interesting tutorial question. Overall, participants appeared to thoroughly enjoy this tutorial question and perceived it as their favourite threshold concept being tested to date.

A few participants found this tutorial question to be challenging as they were unable to determine exactly what was required of them. However, most participants engaged with the lecture content prior to attempting the tutorial question in order to acquire a deeper understanding of the threshold concept being tested. Once the participants attempted the tutorial question, they then engaged with the demystified threshold concepts explanation in order to rectify any errors made. Below are descriptions provided by the participants for question 1 of the reflective learning journal, 'How did you perform in the tutorial?'

- *I think I crushed it.*
- *I had all answers correct.*
- *I performed good in this tutorial.*
- *I performed good.*
- *Well.*
- *Am performing good.*
- *I have a previous knowledge on the bank reconciliation, and that helped, but I was a little rusty. It was a pretty interesting tutorial.*
- *I did extremely well. I did way better in this week than any other.*
- *Good. I fully understood the question and how to go about preparing the bank reconciliation.*
- *Performed well in the tutorial after may tries.*
- *I did attempt it but was unable to determine what was required.*

- *Moderate.*
- *Doing a bank reconciliation was tricky because I did not know where certain values go but I tried my best.*
- *In this tutorial, I was unfamiliar with the concepts in this section. I was determined to understand the section before I attempted the tutorial. In my first attempt I did better than I expected and was happy with my first try. I did make a few mistakes, but it was cleared up after I corrected them.*
- *I didn't perform too well I got the answer, however.*

Question 4: Is there anything else you might want to add😊?

For question 4 of the reflective learning journal, participants expressed their gratitude for my assistance in this tutorial question and for introducing them to the Threshold Concepts Theory, and they further indicated that they had a great learning experience as they enjoyed knowing how to apply the relevant threshold concept from this tutorial question. Below are descriptions provided by the participants for question 4 of the reflective learning journal, 'Is there anything else you might want to add😊?'

- *Thank you so much for assisting us and introducing the Threshold concepts.*
- *It was a great learning experience. I now know how to reconcile a bank statement. I enjoy this section.*

10.3.2.5 Perceptions (Tutorial 5 Attempts)

Question 1: How did you perform in the tutorial?

For question 1 of the reflective learning journal, more than half of the participants indicated that they performed exceptionally well in this tutorial question, with some participants observing that they had actually "crushed it" this time by answering the question perfectly. Participants indicated that they fully understood the tutorial question and the requirements of the question even though it took them some time to understand this threshold concept. One of the participants indicated that this was a threshold concept that she needed to study further, but that her performance with the previous threshold concept had improved as she had reattempted the previous tutorial question in conjunction with this threshold concept. Others indicated that even though they acquired the first part of the threshold concept in this tutorial, they had

experienced difficulty with the second part. However, upon reviewing the demystified threshold concepts explanation, this was no longer seen as a difficulty, as the second part of the tutorial question was a repeat of the first part in a different format. A few participants indicated that they were apprehensive when confronted with this threshold concept, but they were determined to engage with the lecture content in order acquire as deep an understanding of the threshold concept as they possibly could. To their surprise, their hard work and motivation had paid off as they had performed much better than expected with only a few minor errors. Overall, participants had a good understanding of the threshold concepts being tested and were comfortable to ask me for guidance in order to clarify their understanding. Below are descriptions provided by the participants for question 1 of the reflective learning journal, 'How did you perform in the tutorial?'

- *Crushed it.*
- *Performed exceptionally well in the tutorial and understood it really well.*
- *Good.*
- *I performed well.*
- *I performed good in the tutorial.*
- *I performed good.*
- *Good.*
- *I did extremely well.*
- *Well. It did take me quite some time to understand the process.*
- *I managed to get the T.P Ledger and Recon statement correct, but did have difficulty with the remittance advice.*
- *I had a hard time with adjusting trade payables and I think it's a section I need to work on. I feel that I am getting better with bank reconciliation statements.*
- *In this tutorial, I was again unfamiliar with the concepts in this section. I was determined to read up on this section and gain as much knowledge as I can before attempting this tutorial. In my first attempt, I performed better than I expected with a few minor errors.*
- *I used the textbook as a reference so I could understand.*
- *I understood this activity for the most part. I had some guidance from Sasha as she told me that it was very similar to week 4.*

Question 4: Is there anything else you might want to add😊?

For question 4 of the reflective learning journal, participants indicated that in spite of the few errors made, this threshold concept was not difficult to understand as it was similar to the previous threshold concepts tutorial question. Participants expressed their gratitude for my assistance in this tutorial question and for introducing them to the Threshold Concepts Theory. Below are descriptions provided by the participants for question 4 of the reflective learning journal, 'Is there anything else you might want to add😊?'

- *Thank you so much for assisting us and introducing the Threshold Concept.*
- *It was good because its similar to Bank Recon. It wasn't very hard to understand, even though there are some loose ends.*

10.3.2.6 Perceptions (Tutorial 6 Attempts)

Question 1: How did you perform in the tutorial?

For question 1 of the reflective learning journal, half of the participants indicated that they performed extremely well and that they enjoyed attempting the tutorial question as they found it to be easy. Two participants indicated that they did not perform well in this tutorial question as they missed out a step and therefore made many errors. The rest of the participants experienced this tutorial question as moderate, as they understood most of the threshold concepts being tested, but they did fully understand the method upon completion of engaging with the demystified threshold concepts tutorial explanation. Below are descriptions provided by the participants for question 1 of the reflective learning journal, 'How did you perform in the tutorial?'

- *I performed good.*
- *Performed really well & found the tut easy.*
- *I think I did pretty good in this tut.*
- *Well.*
- *I did extremely well.*
- *I did very good in the tutorial.*
- *I enjoyed it.*
- *Not very well.*

- *In this tutorial, I came across a lot of errors as I did not account for VAT. I was unsure which amount was required for each amount as I was not confident in my answers.*
- *Moderate.*
- *Most parts of the tutorial question were correct, with the exception of calculations for VAT not being shown.*
- *I misunderstood if VAT was inclusive or not, but understood the method.*

Question 4: Is there anything else you might want to add😊?

For question 4 of the reflective learning journal, participants indicated that they performed much better than they had expected to and that they had become more confident when engaging with all types of journal entries being tested due to the detailed nature of the demystified threshold concepts explanation provided. One of the participants indicated that she needed just a little more facilitation for this threshold concepts tutorial question. Other participants commended me for a job well done and they expressed their gratitude for my assistance in this tutorial question as they found this to be a great experience. They also indicated that learning the threshold concepts of Accounting 101 was exactly what they had required in their learning journey and that this was the easiest learning experience that they had encountered. Below are descriptions provided by the participants for question 4 of the reflective learning journal, 'Is there anything else you might want to add😊?'

- *Thank you so much for all of your help. I really appreciate it.*
- *A little bit of facilitation.*
- *After this tutorial I have become more confident with all types of journal entries due to the detailed explanation of the threshold concepts.*
- *I performed better than I expected.*
- *This was a great experience, Sasha! Thank you so much for teaching me these TC that I needed the most. A job well done! VAT is now the easiest thing I've come across.*

10.3.2.7 Perceptions (Tutorial 7 Attempts)

Question 1: How did you perform in the tutorial?

For question 1 of the reflective learning journal, participants indicated that even though they understood this tutorial question, overall, they found it to be moderate to challenging. Participants indicated that their prior knowledge from their business studies assisted them to understand the threshold concepts being tested. They also indicated that upon them utilising the lecture content, the very clearly explained demystified threshold concepts explanation and the assistance from me, they were then able to learn and understand the threshold concepts being tested. Below are descriptions provided by the participants for question 1 of the reflective learning journal, 'How did you perform in the tutorial?'

- *This tutorial was challenging.*
- *I performed bad.*
- *It was extremely difficult.*
- *Moderate.*
- *Although I had difficulty answering the question asked, I understood the concepts needed for the tutorial – overall I performed alright.*
- *I used the textbook as a reference so I could understand.*
- *This tutorial made sense after reading it quite a bit.*
- *Business studies and prior knowledge aided understanding the very well explained points and descriptions of the different services.*
- *This tutorial was the most challenging for me as I did not understand the concepts in the section even after my own work review before attempting the tut. Although after asking for help from my teacher, Sasha Padayachi, I was able to learn the concepts that was tested in the tut question.*

Question 4: Is there anything else you might want to add😊?

For question 4 of the reflective learning journal, one of the participants indicated that even though he had learned a lot from the threshold concepts tutorial programme, he no longer had time available to continue with any further tutorial questions as he had other work to do at home. Thankfully, this was the last tutorial question in the programme.

Participants expressed their gratitude for my assistance in this tutorial question and that they felt that my assistance made it easier for them to understand the threshold concepts being tested. They further indicated that they loved this tutorial question as they found it simple to understand and that they had an amazing learning experience throughout the entire threshold concepts tutorial programme. Below are descriptions provided by the participants for question 4 of the reflective learning journal, 'Is there anything else you might want to add😊?'

- *Thank you so much for all of your help. I really appreciate it.*
- *I've learnt a lot from threshold explanation. I have a lot of work to do since I am home, that's why I won't participate well to threshold.*
- *Loved this tutorial. Simple to understand. Sasha makes it so easy for me to understand. Amazing experience. Thank you!*

10.4 Demystified Threshold Concepts Infused Materials

This section describes one of the affinities identified in the Interactive Qualitative Analysis (IQA) methodology, that of the *demystified threshold concepts infused materials*. The perceptions the participants had regarding the demystified threshold concepts infused materials used throughout the tutorial programme are documented in this chapter using the responses to the second and third questions of the reflective learning journal for each tutorial question attempted:

Question 2. Comment on the identification of the threshold concepts.
Question 3. Did the threshold concepts explanation help you to learn anything?

Prior to conducting this analysis, an analysis of the preconceptions the participants possessed of the Threshold Concepts Theory was conducted.

10.4.1 Preconceptions of the Threshold Concepts Theory

A further purpose of the tutorial programme was to test the impact of the threshold concepts of the discipline of Accounting 101. During the first part of the methodology, the participants were asked to complete a 'Getting to Know You' document prior to the commencement of the threshold concepts tutorial programme. One of the questions asked in this document was regarding their preconceptions and expectations of the Threshold Concepts Theory. The next section goes on to further document the perceptions the participants possessed regarding the Threshold Concepts Theory and the demystified threshold concepts infused materials used throughout the tutorial programme.

Participants understood the Threshold Concepts Theory to be a theory that comprised of concepts that posed a problem as they were difficult to understand, but were also deemed to be essential to the discipline of Accounting 101. Participants who were studying Accounting 101 for the first time felt that this theory could provide them with a better understanding and an easier way of learning in order to master the concepts of the discipline, and that they could eventually implement when learning the remainder of their disciplines in their chosen programme. They were apprehensive as they felt that the "less is more" approach that the theory adopted implied that the threshold concepts being tested would not be explained in sufficient detail. This was not the case, however, as the solutions to the tutorial questions provided the participants with fully detailed threshold concepts explanations. Other participants indicated that they felt that the theory summarised many concepts that they initially perceived as difficult and that this summary would provide those who lacked critical thinking skills, with an easier way to understand these threshold concepts. They also realised that the narrow focus the Threshold Concepts Theory offered was a breath of fresh air that allowed them to find a newly adopted holistic approach to learning that would not inundate them with the content of the entire discipline.

One of the participants admitted that he volunteered for the study in order to establish why he "sucked" and why other students grasped the discipline content of Accounting 101 without any effort. He also indicated that upon further reading of the Threshold Concepts Theory and the activities outlined in the study, that he found the study to be "cool" and was hoping to add value to the study. Participants indicated that when they first read about the theory, it sounded interesting to them, and as they were the type of participants who liked to try new things, they

were extremely excited about the tutorial programme and were looking forward to learning more about what this theory had to offer them in order to improve their learning of Accounting 101. Another participant indicated that he felt by interacting with me, this would create a focus on the Threshold Concepts Theory that would spark his interest in understanding the purpose of Accounting 101.

Participants assumed that the Threshold Concepts Theory would provide them with anything from a basic to a deeply-rooted understanding of the discipline content, in order to expand on their existing knowledge and therefore eliminate any confusion experienced. They indicated that once they had acquired this deep understanding of the threshold concepts, and if they encountered any difficulties, they would apply the newly-learned threshold concepts to their prior knowledge in order to gain a full understanding of the difficulty experienced. Participants felt hopeful that the Threshold Concepts Theory would provide them with an effective and efficient understanding of the discipline, therefore allowing them to perform well in their assessments. In addition to acquiring a deep understanding of the threshold concepts of the discipline, they indicated that they understood that the Threshold Concepts Theory would allow them to change their way of thinking about a discipline. Below are descriptions provided by the participants regarding their preconceptions of the Threshold Concepts Theory.

- *Concepts that are difficult to understand and become a problem, but are very essential in accounting.*
- *I think they are an easy way of learning accounting and will help more students like me who are doing accounting for the first time.*
- *It will help me get a better understanding of accounting since I didn't do it high school and how to go about doing problems better by mastering the concepts.*
- *Taking into account that this theory follows a 'less is more' approach, my concern would be the curriculum not being completed in enough detail.*
- *It summarises a lot of concepts that are hard to understand at first. It could make the academic year a bit more understanding to me.*
- *I think the 'threshold concept theory' is something that's different and should be a breath of fresh air in terms of trying to find a way of learning without feeling like we are being suffocated with work.*
- *When I signed up, I wanted to understand why I sucked at this subject (perhaps I should*

use more positive assertions) and why others grasp it so effortlessly (that always intrigued me). But I also found the study that Miss Sasha is doing really cool, and I thought I would in some way contribute to a field of study.

- *It sounds interesting. It's the first time that I have heard about this theory. As a person who like to try out new things, I'm looking forward to learning this new Method.'*
- *This Threshold Concepts Theory is going to be very beneficial for me, and is going to help me in Accounting 101. I am extremely excited to start with the tutorial programme.*
- *I am very interested in it and I feel it will help to better my studies in accounting.*
- *I think that this Theory has the capability to make learning harder concepts and the subjects a bit more manageable and easy for someone that is less critical thinker, to learn and grasp their work.*
- *My expectations with the threshold concept theory is that it will develop a lot of focus between the lecturer/ tutor (you) and engagement which will bring more enlightenment and triggers more interest in comprehending the fundamental purpose of accounting.*
- *I assume these concepts and theories would give a basic understanding of the various topics in accounting and would be able to assist in these sections.*
- *A way to get a better understanding on the work and to eliminate confusion.*
- *My preconception and expectation of the Threshold concept is the following. I believe it will help me in understanding accounting concepts to the root. Where if I see a problem or a question, that I am unable to comprehend. I can relate it to something I've learnt using the concept, which will assist me in putting the puzzle together.*
- *My expectation is having a better understanding of the accounting work being taught to me and being able to build on my knowledge more strongly on what I have learnt already on my own and from my lecturer.*
- *I hope that the Threshold Concepts Theory helps me understand accounting 101 better and more quickly, and that it offers me the required help to do well in this module.*
- *My preconception is to learn and attempt every question they will send.*
- *I just finished reading the notes you send us on Erik Meyer and Ray Land and I'm sorry, but I just don't understand what is going on there, I'm super confused.*
- *To gain a better understanding of the course material. From what I understand, it is a type of concept that can change the way I think and how I understand core topics. I am hoping to gain a better understanding of the program and I hope it changes the way I comprehend the literature.*

- *That I will understand the basics of accounting better as well as learn a more effective way of learning that I can implement into all my modules.*

10.4.2 Reflective Learning Journals (Perceptions of the Threshold Concepts Theory)

10.4.2.1 Demystified Threshold Concepts Infused Materials (Tutorial 1 Attempts)

Question 2. Comment on the identification of the threshold concepts.
Question 3. Did the threshold concepts explanation help you learn anything?

For questions 2 and 3 of the reflective learning journal, some participants indicated that they had learned the definition of the Threshold Concepts Theory, and not only did they indicate that they had identified the threshold concepts being tested, but they went on to explain to me why they thought these concepts were classified as threshold concepts. They indicated that they identified that these threshold concepts possessed the characteristics of the Threshold Concepts Theory, and that they had the ability to change the way a participant thought.

Some participants indicated that they found the threshold concepts in this tutorial question to be easily identifiable. Others, however, indicated that they took a little more time to identify the threshold concepts. A few participants utilised the characteristics of the Threshold Concepts Theory to articulate their identification of the threshold concepts. They used the characteristics 'transformative', 'integrative' and 'troublesome' in their explanations.

All participants indicated that after attempting the tutorial question and engaging with the demystified threshold concepts explanation in the solution provided, they were then able to use the explanations provided in order to assist them to clearly understand the threshold concepts being tested. These explanations also allowed participants to further understand when these threshold concepts are used. Participants who were already familiar with the topic indicated that the threshold concepts explanations assisted them to understand the aspects of the topic that they did not understand before. In addition to providing the participants with a clear understanding of the threshold concepts being tested, they also assisted them to identify their misunderstandings and any errors made, therefore allowing participants to correct them.

Participants realised the importance of engaging with the lecture content and the threshold concepts of the discipline before attempting the tutorial questions based on these threshold concepts. Those who had studied accounting in their schooling careers, indicated that the threshold concepts explanations assisted them to revise the threshold concepts being tested. Those who had answered the tutorial question correctly indicated that the threshold concepts explanations provided them with a new way of approaching a tutorial question. Below are descriptions provided by the participants for questions 2 and 3 of the reflective learning journal, 'Comment on the identification of the threshold concepts' and 'Did the threshold concepts explanation help you learn anything?'

- *It was easy to identify the threshold concepts. Yes.*
- *They were easily identifiable in this tutorial. Yes, they helped revise on accounting concepts and help understand them better.*
- *Easily identifiable. Yes.*
- *They definitely helped in this tutorial. Yes.*
- *Although I got everything right, the concept has taught me a new way of approaching the question. Yes.*
- *The threshold concepts have really been assisting me with regards to understanding the transaction. Yes, the threshold concepts have been a great help.*
- *Transformative →Debits and credits side of the accounting equation must equal. →Assets of business are the funds of the business. Integrative →Allows us to use the accounting equation to record a transaction. Yes.*
- *The double entry principle and accounting equation are threshold concepts since they change the mindset of a student and they have the characteristics of the threshold concepts theory. Well, as far as we've gone, no - because I already knew the accounting equation and double entry principle. However, if there is anything knew I've learnt it's the definition of threshold concepts.*
- *Cash basis of accounting and accrual concepts were understood. Bank bal and profit were not identified. Yes! I now understand where I went wrong.*
- *I eventually spotted the concept. The concept makes understanding a bit easier once you know the concept.*
- *Transformative and troublesome.*
- *There is nothing much I can say about TC for tut 1 but that it highlighted certain*

misunderstandings. Yes, it helped me a lot.

- *The threshold concepts explanation helped me to find my mistakes and correct them.*
- *The identification of the threshold concepts was clear and understandable after attempting the tutorial and reading the explanation. It showed the key concepts needed to be understood before attempting similar questions to the tutorial. By doing accounting equation before doing the journal entry, it makes it easier to answer similar questions. Yes. The threshold concept explanations help me clear my queries in this section and help eliminate my errors. I now have a better understanding of what Trade Receivables are and when they are used.*
- *Even though I had an understanding of this section before-hand, the threshold concept helped me to understand the parts of this section I didn't.*

10.4.2.2 Demystified Threshold Concepts Infused Materials (Tutorial 2 Attempts)

Question 2. Comment on the identification of the threshold concepts.
Question 3. Did the threshold concepts explanation help you learn anything?

For questions 2 and 3 of the reflective learning journal, some participants indicated that they found the threshold concepts in this tutorial question to be identifiable and that they felt that they played a vital role in their learning journey. Others indicated that they almost fully identified the threshold concepts. A few participants utilised the characteristics of the Threshold Concepts Theory to articulate their identification of the threshold concepts. They used the characteristics 'bounded' and 'troublesome' in their explanations as they regularly confused the two threshold concepts being tested.

All participants indicated that after attempting the tutorial question and engaging with the demystified threshold concepts explanation in the solution provided, participants were then able to use the explanations provided in order to assist them to acquire knowledge regarding the threshold concepts being tested, and therefore clearly understand the threshold concepts being tested. In addition to providing the participants with a clear understanding of the threshold concepts being tested, they also assisted the participants to confront the learning challenges they encountered with the tutorial question. Participants indicated that after they had engaged with the demystified threshold concepts explanation, the solution provided highlighted any initial misunderstandings experienced and the areas of difficulty. One of the

participants indicated that he did not even know how to apply the threshold concepts being tested. The engagement with the threshold concepts explanations allowed participants to identify their misunderstandings and any errors made, allowing participants to understand why they made the errors they did, and therefore correct them.

These explanations also allowed participants to further understand exactly when and what each threshold concept was used for and exactly how to use them as per the detailed, step by step explanations. The solution provided also assisted participants to acquire an understanding of the difference between the two threshold concepts being tested, therefore allowing them to attempt similar tutorial questions in the future with ease. One of the participants indicated that he did not feel that he was fully utilising the threshold concepts as yet as he was still trying to move away from his previous way of thinking and previous way of learning, towards the thresholds concepts way of thinking about how to respond to a tutorial question. Below are descriptions provided by the participants for questions 2 and 3 of the reflective learning journal, 'Comment on the identification of the threshold concepts' and 'Did the threshold concepts explanation help you learn anything?'

- *They were identifiable. Yes, they helped understand the method.*
- *I did identify the threshold concepts but I did not know how to work with them or use them to answer the question. Yes, a lot.*
- *I identified Accrual & Cash Basis as well as credit sales. Profit was not calculated. It showed me why I went wrong, so I found it to be very helpful.*
- *A bit of misunderstanding but managed. I almost fully spotted the concept. Once finished the tutorial I managed to fully understand everything.*
- *Fairly good. Yes, it made the accrual basis of accounting understandable.*
- *Acquired knowledge of cash basis and accrual basis. Troublesome – often confused the two. Bounded.*
- *They definitely helped. Yes, I picked up a few things in tutorial 2, because it was my first time seeing it and I realised it need to read more carefully.*
- *It has pin pointed many areas of difficulties that some students may approach. Yes, it helped me distinguish between cash and accrual basis of accounting.*
- *The Threshold Concepts have really been assisting me with regards to understanding the transaction. Yes, the threshold concept have been great help.*

- *Yes, it helped me a lot. It brought more enlightenment as to when and how do you prepare the accrual basis of accounting. I think these threshold concepts test plays a vital role because I never thought I would come across something called accrual basis of accounting.*
- *Yes. It helped me understand each concept better. I understood both the cash and accrual basis and what each is used for.*
- *Going through the threshold concepts helped me to find my mistakes as well as understanding the question more.*
- *The identification of the threshold concepts understandable after attempting the tutorial and correcting my mistakes. It showed me that it was important to differentiate between the cash basis of accounting and the accrual basis of accounting, and after understanding the difference between those two concepts it is easy to attempt similar questions. Yes. The threshold concepts explanation helped me in the understanding of income and expenses. It helped me understand how I record income and expenses in both cash basis and accrual basis. Due to this it helped me eliminate my queries and I now have a better understanding in this section.*
- *Yes, I identified the threshold concepts and I now fully understand the difference between actual and cash basis. Yes, this time I learnt how to calculate profit for year end in both cash and actual basis.*
- *At first I was really confused with this section but after doing the tutorial provided I feel I have a good understanding of the cash basis of accounting and accrual basis of accounting.*
- *I don't think I am fully using the threshold concept yet cos I'm still learning it an adapting to it. It's still new to me so I am still trying to break away from my old way of thinking and learning.*

10.4.2.3 Demystified Threshold Concepts Infused Materials (Tutorial 3 Attempts)

Question 2. Comment on the identification of the threshold concepts.

Question 3. Did the threshold concepts explanation help you learn anything?

Participants indicated that they found the threshold concepts in this tutorial question to be easily identifiable as they perceived this threshold concept to be a basic step in the discipline of Accounting 101. A few participants indicated that they were unable to identify the threshold concept at first. Others utilised the characteristics of the Threshold Concepts Theory to articulate their identification of the threshold concepts. They used the characteristic 'transformative' in their explanations.

All participants indicated that after attempting the tutorial question and engaging with the demystified threshold concepts explanation in the solution provided, they were then able to use the explanations provided in order to assist them to clearly understand the threshold concepts being tested. Participants indicated that these explanations identified the main concepts of the discipline and further explained these main concepts in a user-friendly manner that made it easier for participants to understand, as each threshold concept was unpacked into detailed explanations, that they considered to be vague before attempting the tutorial question.

These demystified explanations also allowed participants to further understand why these threshold concepts were used. In addition to providing the participants with a clear understanding of the threshold concepts being tested, they also assisted participants to identify their misunderstandings and any errors made.

The purpose of the threshold concepts explanation was to assist participants to identify their misunderstandings and errors, as each threshold concept was broken down into detailed explanations. After participants had analysed their misunderstandings and errors in conjunction with these explanations, they were able to correct them, and therefore became more confident when attempting threshold concepts tutorial questions going forward.

Participants who had studied accounting in their schooling careers, indicated that the tutorial question assisted them to remember their prior accounting knowledge when attempting it, and that the threshold concepts explanations allowed them to fully understand the threshold concepts being tested. Participants perceived threshold concepts to be a learning tool that

assisted them to perceive Accounting 101 vividly, and therefore provided a better understanding of the discipline. Below are descriptions provided by the participants for questions 2 and 3 of the reflective learning journal, 'Comment on the identification of the threshold concepts' and 'Did the threshold concepts explanation help you learn anything?'

- *I was able to identify the threshold concepts. Yes.*
- *I was able to identify the threshold concepts. Yes, it did.*
- *'Was able to spot the concept with ease. The threshold concept made it easier for me to understand the account section.*
- *Good, helpful. Yes.*
- *They're pretty useful in explaining the basic concepts.*
- *It pinpointed the main concepts related to the topic. Yes.*
- *Adjusting journal entries and depreciation were the troublesome areas. Yes. They explained how and why I went wrong.*
- *They were hard to see, but I was able to understand them. Yes, it helped understand the transactions I couldn't do.*
- *I was not able to identify the threshold concepts at first but after reading the explanation of the threshold concepts I have a better understanding. Yes, each account was broken down in the concepts to help me understand their use and purpose.*
- *The identification of the threshold concepts at first was difficult as the important concept needed to be understood was understanding adjusting entries. It was my weak area. Although after viewing all my errors and reading the explanation I now understand better on how to identify different adjusting journals. Yes. The threshold concept explanation was extremely helpful. It taught me that there were different kinds of adjusting journals and by reading up on those it was easier to identify the different types. It also taught how to write the different journals for the different types of adjusting concepts. The explanation in this tutorial boosted up my confidence in this area as I know eliminated all my mistakes.*
- *Although I managed to complete it and the threshold concept made it more clear for me, I went back and corrected my mistakes.*
- *Transformative. Yes, it helps me to identify my mistakes and misunderstandings. I like your explanations make things clear.*
- *Once I read it, I understood it and recognised it. Yes, it helped me to understand the*

reason why we do adjusting journal entries – is to get a clear financial statement.

- *The threshold concepts have really been assisting me with regards to understanding the transactions better. Yes, the threshold concepts have been a great help.*
- *I think the threshold always help us to see things vividly and have a better understanding of that concept so yeah, they did help me learn many things.*
- *It was quite easy to recognise adjustments as a TC since it is a basic step in Acc. Yes, the TC explanation helped because it unpacked the all the various small explanations that were rather vague earlier such as the one with the income in advance.*
- *It helped me to jog my memory of this section in accounting. I already had a good understanding and started to remember my prior work while attempting the tutorial but threshold concept did help me to fully understand this section.*

10.4.2.4 Demystified Threshold Concepts Infused Materials (Tutorial 4 Attempts)

Question 2. Comment on the identification of the threshold concepts.

Question 3. Did the threshold concepts explanation help you learn anything?

For questions 2 and 3 of the reflective learning journal, some participants indicated that they found the threshold concepts in this tutorial question to be identifiable. Others indicated that they did identify the threshold concepts with some difficulty and that they needed further explanations, which were provided in the solution. All participants indicated that after attempting the tutorial question and engaging with the threshold concepts explanations in the solution provided, they were able to use the explanations provided in order to assist them to acquire knowledge regarding the threshold concepts being tested and therefore clearly understand the threshold concepts being tested. In addition to providing the participants with a clear understanding of the threshold concepts being tested, they also assisted participants to confront the learning challenges they encountered with the tutorial question. They indicated that after they had engaged with the threshold concepts explanations, the solution provided highlighted all the uncertainties experienced and the areas of difficulty. The engagement with the threshold concepts explanations allowed participants to identify their uncertainties and any errors made, to understand why they made the errors they did, and therefore to eliminate them.

These explanations also allowed participants to further understand exactly what each threshold concept was used for and exactly how to use them as per the detailed, step-by-step explanations. Participants indicated that they found these step-by-step explanations provided to be easy to understand and extremely useful, allowing them to attempt similar tutorial questions in the future with ease. One of the participants indicated that in addition to finding the threshold concepts explanations to be useful, he also decided to substitute his name with "student" in the tutorial question provided in order to immerse himself in the threshold concepts scenario, which also proved to be useful.

Participants also indicated that the threshold concepts explanations solidified the new threshold concepts being tested. They allowed participants to perceive the design method formulated and the rationale behind the explanations. Below are descriptions provided by the participants for questions 2 and 3 of the reflective learning journal, 'Comment on the identification of the threshold concepts' and 'Did the threshold concepts explanation help you learn anything?'

- *I was able to identify the Threshold Concepts. Yes.*
- *Good. Yes.*
- *Concepts were identified. The threshold concepts further solidified the new information learnt from this exercise.*
- *The concepts required were understood. Yes, they helped me see the method and reasoning behind it.*
- *Spotted the concepts with difficulty. The threshold concept, however, did make it easier, at the end, allowing me to eventually understand the bank recon.*
- *I just found myself recording the wrong things in the updated bank account. I guess it was kinda hard to identify from the general journal. The threshold concepts were helpful in that when I substituted my name for "student" I kinda got more invested in the concepts for some odd reason.*
- *There are still difficulties with tutorial 4 I need more explanation. Yes, this concept help me a lot.*
- *The steps were really useful.*
- *The Threshold concepts have really been assisting me with regards to understanding the transaction. Yes, the threshold concepts have been a great help.*
- *Yes, it helped me further understand the procedure of the bank recon. I fully understood*

how to prepare the bank recon statement.

- *I looked at the threshold concept and it took all my uncertainties away. Making me understand the topic more clear.*
- *The identification of the threshold concept was understandable as I was able to identify what was being asked. This was due to attempting the tutorial and thereafter furthering my understanding with my corrections and most importantly reading over the given explanation. Yes. The threshold concept explanation informed me on the steps that should be taken when preparing a Bank Reconciliation Statement. Each step explained why each was taken in reference to the tutorial question. This was really helpful as it helped in my understanding and it made it easier to eliminate my errors.*
- *Yes, threshold concepts helps me as always 👍.*
- *Well, it was quite easy to identify since it took me days to learn the chapter. It added to the knowledge.*
- *While doing the activity, I feel I learnt and started to understand the bank recon much better than what I previously did. Yes, it helped me to now follow steps that will help in future when doing bank recons.*
- *For me, I was able to identify the threshold concepts. The explanation helped to greater understand.*

10.4.2.5 Demystified Threshold Concepts Infused Materials (Tutorial 5 Attempts)

Question 2. Comment on the identification of the threshold concepts.

Question 3. Did the threshold concepts explanation help you learn anything?

For questions 2 and 3 of the reflective learning journal, many participants indicated that they found the threshold concepts in this tutorial question to be identifiable. A few participants went on to explain to me why they thought these concepts were classified as threshold concepts. They indicated that it made sense to perform a creditors reconciliation and remittance advice for their creditors. One of the participants indicated that he did identify the threshold concepts with some difficulty, as he found it confusing to determine the steps he needed to take in order to complete the tutorial question.

All participants indicated that after attempting the tutorial question and engaging with the demystified threshold concepts explanations in the solution provided, they were able to use the explanations provided in order to assist them to acquire knowledge regarding the threshold concepts being tested and therefore clearly understand the threshold concepts being tested. Most participants felt that this threshold concept was simple and that they understood the topic perfectly. Even though one of the participants indicated that he initially found the threshold concepts to be slightly daunting, the threshold concepts explanations allowed him to fully understand and enjoy this topic as he felt positive about almost completing the tutorial question correctly. Others indicated that they found these demystified explanations to be clear and effective when used to fully understand the tutorial question. Yet others indicated that they used the threshold concepts explanations to reconfirm their understanding of the threshold concepts being tested.

In addition to providing the participants with a clear understanding of the threshold concepts being tested, they also assisted participants to confront the learning challenges they had encountered with the tutorial question. Participants indicated that after they had engaged with the threshold concepts explanation, the solution provided highlighted any initial misunderstandings experienced and the areas of difficulty. The engagement with the threshold concepts explanations proved to be very useful as these explanations also allowed them to further understand exactly when and what each threshold concept was used for and exactly how to use them as per the detailed, step by step explanations. They were therefore able to identify their misunderstandings and any errors made, allowing them to understand why they made the errors they did, and therefore correct them and eliminate the uncertainties. Once their errors and uncertainties were eliminated, participants used their new understanding to differentiate between the threshold concepts being tested, therefore providing them with a deeper understanding of exactly what was required as per the step-by-step explanations in the threshold concepts explanations.

Participants who had studied accounting in their schooling careers, indicated that the tutorial question assisted them to remember their prior accounting knowledge when attempting it, and that the threshold concepts explanation allowed them to fully understand the threshold concepts being tested. Other participants who had not studied accounting in their schooling careers, were keen to attempt more threshold concepts tutorial questions in order to fully grasp the concepts. One of the participants indicated that she felt like she had become one with the threshold

concepts and that she could identify and utilise threshold concepts as if she was on autopilot. Below are descriptions provided by the participants for questions 2 and 3 of the reflective learning journal, 'Comment on the identification of the threshold concepts' and 'Did the threshold concepts explanation help you learn anything?'

- *I was able to identify the TCs. Yes.*
- *They were identifiable. Yes, they did.*
- *Easily identifiable. Yes.*
- *I like creditors recon so it was rather simple. Yes.*
- *I understand that chapter perfectly.*
- *Threshold concepts were easily identifiable as it makes sense to reconcile and also do a remittance advice for the other party. It did add on to the information I had prior.*
- *All concepts, with the exception of the remittance advice were identified with ease. Slightly. Perhaps with more examples the concepts will make sense and I will be able to fully grasp them.*
- *Was able to identify the concepts with ease. Yes, the concept explanation made me reconfirm that I understand everything.*
- *The explanations and the TC made complete sense actually. It was kinda daunting at first but now after looking at the explanation I kinda enjoyed it. Feels good to almost get the activity correct.*
- *The Threshold concept has really been assisting me with regards to understanding the transaction. Yes, the threshold concept have been a great help.*
- *I was able to prepare the creditors reconciliation statement and the remittance advice. I was able too after some time to follow each step carefully and prepare both statements. The threshold concepts explanation helped immensely as it helped me understand any problem that I had.*
- *Looking at the threshold concept cleared my uncertainties and I understood the question better. I like the explanations as it's clear and I can go back and fix my errors.*
- *The identification of the threshold concepts was understandable in the sense that in was important to know how to do the creditors reconciliation statement and the remittance advice. After clearing my errors and expanding my understanding by reading the explanation provided, I am now able to differentiate between the two. Yes. The threshold concepts helped me understand what is required to do in each question which*

was asked in the tutorial. There was an explanation provided for each step that would be faced in the question and helped me answer my queries and correct my mistakes. This tutorial was a real challenge as it was confusing to figure out certain steps in my first attempt, but the threshold concepts explanation helped me clear my doubts.

- *While attempting this tutorial, I felt I understood what I needed to. I had a good understanding of creditors recon prior to attempting it but I think the threshold concept helped polish up the concept for me.*
- *I feel like I have become one with the threshold concepts. I feel like I am able to identify and use the threshold concepts without even thinking about it.*

10.4.2.6 Demystified Threshold Concepts Infused Materials (Tutorial 6 Attempts)

Question 2. Comment on the identification of the threshold concepts.
Question 3. Did the threshold concepts explanation help you learn anything?

For questions 2 and 3 of the reflective learning journal, almost all of the participants indicated that they found the threshold concepts in this tutorial question to be easily identifiable and straightforward. Two participants indicated that they experienced some difficulty when identifying the threshold concepts. One of the participants utilised the characteristics of the Threshold Concepts Theory to articulate his identification of the threshold concepts. Participants used the characteristic 'transformative' in their explanations.

All participants indicated that after attempting the tutorial question and engaging with the demystified threshold concepts explanation in the solution provided, they were able to use the explanations provided in order to assist them to acquire knowledge regarding the threshold concepts being tested and therefore clearly understand the threshold concepts being tested.

In addition to providing the participants with a clear understanding of the threshold concepts being tested, they also assisted participants to confront the learning challenges they had encountered with the tutorial question. Participants indicated that after they had engaged with the threshold concepts explanation, the solution provided highlighted any initial misunderstandings experienced and the areas of difficulty. The engagement with the threshold concepts explanation allowed them to identify their misunderstandings and any errors made, to understand why they made the errors they did, and therefore correct them. These explanations

also allowed participants to be cognisant of any learning challenges that may be presented in the future.

These explanations also allowed participants to further understand exactly when and what each threshold concept was used for and exactly how to use them as per the detailed, step-by-step explanations. Participants who had studied accounting in their schooling careers, indicated that the threshold concepts explanation confirmed the understanding they already possessed, and this therefore improved their knowledge of the threshold concepts being tested. They were very happy with their performance in this tutorial question and indicated that they felt that identifying and adapting to the threshold concepts being tested became easier as the tutorial programme progressed, and that the threshold concepts just flowed out of them. Below are descriptions provided by the participants for questions 2 and 3 of the reflective learning journal, 'Comment on the identification of the threshold concepts' and 'Did the threshold concepts explanation help you learn anything?'

- *'I was able to identify the TCs. Yes.*
- *Fairly good. Yes.*
- *I always enjoyed VAT in High school, so I know this concept very well. Yes.*
- *Identifying the concept was easy and straightforward. The explanation just confirmed what I know already.*
- *All concepts were identified. They provided a further explanation of concepts which proved to be helpful.*
- *I understood one of them, the concept of which was an asset or liability. Yes, understood VAT more.*
- *The questions were very easy to understand and the brief explanation provided helped a lot. The threshold concepts broke it down well to where I understood inclusive and exclusive VAT amounts.*
- *The threshold concepts were extremely helpful. Yes, it did, it has assisted me very much in this tutorial.*
- *I was able to do the journal entries but had a little problem calculating VAT. Yes, it helped me understand how each entry was made with calculating the VAT.*
- *The identification of the Threshold concepts was difficult before when I attempted the tutorial the first time. Although after correcting my errors and improving my knowledge*

by reading the explanation provided, I was able to identify the threshold concepts. Yes. The threshold concepts helped me understand the concepts needed to be understood when doing VAT questions. After reading the explanation, I am now able to identify which accounts require the actual amount payed for goods, the amount including VAT expense and the sum of both accounts (e.g. Inventory amount+ SARS(VAT) amount= Bank amount/Trade Receivables).

- *Transformative.*
- *Threshold concepts were easily identifiable as they were also key factors to remember in the tutorial. Yes, the explanation really helped by highlighting any grey areas that might arise in future.*
- *While doing the tutorial, I felt like I learnt VAT well. As with creditors recon, I had a good prior knowledge to this section but the threshold concept did help to remind me.*
- *I feel it's become a lot easier to identify the threshold concept and adapting to it. I feel like the threshold concepts just flows out of me.*

10.4.2.7 Demystified Threshold Concepts Infused Materials (Tutorial 7 Attempts)

Question 2. Comment on the identification of the threshold concepts.

Question 3. Did the threshold concepts explanation help you learn anything?

For questions 2 and 3 of the reflective learning journal, some participants indicated that they found the threshold concepts in this tutorial question to be easily identifiable. The remainder of the participants indicated that they were unable to identify the threshold concepts at first. A few participants utilised the characteristics of the Threshold Concepts Theory to articulate their identification of the threshold concepts. They used the characteristic 'troublesome' in their explanation of one of the threshold concepts being tested.

All participants indicated that after attempting the tutorial question and engaging with the demystified threshold concepts explanation in the solution provided, they were able to use the explanations provided in order to assist them to acquire knowledge regarding the threshold concepts being tested and therefore clearly understand the threshold concepts being tested.

In addition to providing the participants with a clear understanding of the threshold concepts being tested, they also assisted them to confront the learning challenges they encountered with the tutorial question. Participants indicated that after they had engaged with the threshold concepts explanation, the solution provided highlighted any initial misunderstandings and learning challenges experienced. The engagement with the threshold concepts explanations allowed participants to identify their misunderstandings and any errors made, to understand why they made the errors they did, and to correct them.

These explanations also allowed participants to further understand exactly when and what each threshold concept was used for and exactly how to use them as per the detailed, step-by-step explanations. The solution provided also assisted participants to acquire an understanding of the difference between the two threshold concepts being tested, allowing them to attempt similar tutorial questions in the future with ease.

Once participants acquired a full understanding of the threshold concepts being tested, they were able to identify these threshold concepts, which allowed them to learn this topic in a shorter time period. Participants indicated that the threshold concepts from this tutorial question prompted them to think about their existing investments and financial security, and that they were looking forward to applying this real-world scenario to their lives in the future. Below are descriptions provided by the participants for questions 2 and 3 of the reflective learning journal, 'Comment on the identification of the threshold concepts' and 'Did the threshold concepts explanation help you learn anything?'

- *Good. Yes.*
- *Yes, threshold concepts were easily identifiable. Yes, especially by comparing the different terms (e.g ordinary vs preference shares.)*
- *I wasn't able to identify the TCs. Yes.*
- *They were difficult to identify. Yes, it helped me understand.*
- *Expenses, dividends and ordinary and preference dividends were understood; however, going about Redeemable Cumulative Shares was troublesome. Yes. But I think more elaboration is required.*
- *The explanation helped to understand it a great deal.*
- *I understood the explanation as it was very detailed. The explanation given has cleared many doubts and helped me overcome challenges, because in high school I never really*

favoured this section.

- *The threshold concepts assisted me very much with this tutorial, as I found it very challenging. Yes, it did, it has been of great help.*
- *No attempt made, read solution with question. I understood the explanation well, it helped that it was broken up into each contributing factor so it helped me understand how Cuties was able to meet Doctor Whatsup's needs.*
- *The identification of the threshold concepts was difficult at first, but after some guidance and being faced with the solution, I was able to see how all the concepts worked together. I was therefore then able to identify the concepts needed to be identified. Yes. The threshold concept explanation was extremely helpful. It I explained the difference between two concepts which gave a better understanding of when each should be used and in what type of scenario. It was easy to understand as it explained in reference to the question asked as was therefore able to clear my queries.*
- *Reading this threshold - it helped me understand and learn this section in a short amount of time.*
- *There are different concepts that have to be considered. I found it difficult identifying the threshold concepts but I was able to understand, when I went over it.*
- *The concepts were easily digestible. It got me thinking about making my own investments and financial security as a whole and the issue of time being of the essence. Watch gave me a real-world understanding of the activity and I am looking to apply it in my real life.*

10.5 Perceptions of Accounting 101

10.5.1 Preconceptions of Accounting 101

During the first part of the methodology, the participants were asked to complete a 'Getting to Know You' document prior to the commencement of the threshold concepts tutorial programme. One of the questions asked in this document was regarding their preconceptions of the discipline of Accounting 101.

Of the sixteen participants who engaged in the entire study, eleven indicated that they did not study accounting in their schooling careers. Almost all of the participants possessed negative preconceptions of the discipline. Participants indicated that they perceived accounting to be challenging, scary, confusing and boring. However, some of these participants also indicated that despite these negative preconceptions that they possessed, they were also hopeful and fully focused on working hard to try to understand the threshold concepts of the discipline.

Another participant indicated that their experience with accounting in their schooling career was traumatic and that this was a discipline that they did not resonate with at all, but they did however wish that they did, like some of their other schoolmates. They further indicated that they perceived accounting to be the language of business and a discipline that they could learn from.

Another participant indicated that he was insecure about participating in the tutorial programme as he perceived himself as not possessing the ability to address the tutorial questions provided and believed he would not be able to understand the concepts of the discipline. Participants further indicated that they believed that they would not be capable of excelling in this discipline or becoming passionate about it.

Other participants indicated that they perceived accounting to be easy but boring in their schooling careers, and that they did not give their full attention to it. They also indicated that accounting was just a boring and insignificant discipline that they were forced to study in order to pass their first year of their chosen programme in order to progress to the next.

Participants who indicated that they had not studied accounting in their schooling careers, felt that this discipline would mainly comprise of vast amounts of mathematical calculations with limited theory, that they would be under pressure to grasp in the same time frame as the participants who did have a prior knowledge of the discipline of accounting.

A few participants used vague terminology and vague ideas to describe their preconceptions of Accounting, with one participant indicating that he did not possess any preconceptions at all. Below are descriptions provided by the participants regarding their preconceptions of the discipline of Accounting 101.

- *I think accounting 101 is not an easy module but if I work hard and focus on class, I will make it or pass the module.*
- *It seems scary and confusing to me. I hope that I can understand this subject and try my very best to understand the concepts etc.*
- *Accounting was the subject I gave all of my time to. I was determined to get better and not be the last in class. My teacher previous to my matric teacher did traumatise me around the subject. It's not a natural subject that I get. I understand the basics and mess up in the tests. It's a very structured subject. I took it because it's the language of business and I can learn a lot from it. My Accounting 101 lecturer is really great and fun although time runs away in class. I really like accounting, but I would like it even more if I was actually good at it.*
- *My preconception of Accounting 1 was me having the lack of ability to tackle any tasks involved in this module. The idea of participating in this module gave me a lack of confidence. I had the opinion that I was not capable of excelling in this module despite learning the many concepts, as I believed I would not understand the accounting concepts as well be a student who's passionate about accounting.*
- *My preconception with accounting was that it was a boring module and it is just a thing I know I need to do for this year only in order to pass to the next level of my studies. Also, it was not significant in life.*
- *I found accounting easy but boring and because I found it boring, I didn't focus much on it after grade 9 and started slacking so I dropped it. This year I was a bit skeptical about doing it but have to do it so I am hoping I can grasp the concepts and understand it and do well.*

- *That it would be majority mathematical calculation based with little/ no theory. Also, that it would be hard to grasp and adapt given the fact that I have very little accounting knowledge.*
- *The vast amounts of concepts that I, a 'non-accounting' student, will have to grasp in a short space of time, as opposed to students who have studied accounting.*
- *It deals with money and balancing accounts.*
- *Dealing with accounts that relate to a business making sure every dime is accounted for.*
- *The idea of business payments and transactions. I did business studies so I know accounting terminology.*
- *I don't really think much, I just hope I'll understand.*

10.5.2 Purpose of Accounting 101

During the Interactive Qualitative Analysis (IQA) interview, participants were asked about their perceptions of Accounting 101 upon the completion of the threshold concepts tutorial programme. All participants specifically outlined what they perceived Accounting 101 to be after they had completed studying a semester's worth of discipline content.

Participants indicated that they could use the various accounting learning outcomes to provide them with an understanding of business concepts, as this discipline was the language of business, in order for them to use in their job or their business. Participants also indicated that they could use the various accounting learning outcomes to assist them when managing their accounts, being their income, expenses, assets and liabilities. They realised that they were now able understand how their money would be spent. They needed to take additional expenses like VAT into account when budgeting and planning their debit orders. Participants understood that these various accounting learning outcomes allowed them to become independent and innovative as they now possessed skills that they could implement in the future. They indicated that after they had completed studying a semester of accounting, that this experience would allow them to revise the fundamental concepts learned, as well as provide them with the confidence to approach new accounting threshold concepts. Participants also indicated that despite them having a love-hate relationship with accounting, it had unexpectedly become their favourite discipline as they liked engaging with figures. They indicated that this experience

allowed them to make choices regarding their major disciplines in the future, with one participant who had indicated that she had decided to change her chosen programme from a Bachelor of Commerce General programme to a Bachelor of Commerce in Accounting programme, that required her to major in a non-major discipline, one which she initially had perceived as negative. The explanation the participant gave was as follows:

I believe that this is the profession for me as I am an individual that enjoys taking calculated, well-informed risks and I am well versed with accounting practices. This makes accounting more than just a career path for me but a lifestyle and mindset. Accounting requires creativity, problem solving and strong communication skills, which I believe I will excel in. Accountants of an organisation help make better decisions, and help society do better. Accountant help business achieve their goals, and I would like to be a part of that success. An accounting degree prepares you for many career paths. The above reasons are why I chose to change from BCOM General to BCOM Accounting. I have learnt many techniques and skills from this PhD experience that I am going to practice throughout my degree.

Below are descriptions provided by the participants regarding their perceptions of Accounting 101 upon the completion of the threshold concepts tutorial programme.

- *It is to equip us to be independent so that when we get out of university, we will be able to become innovative and come up with new ideas. Teaches us to manage assets. Invest in assets instead of Liabilities.*
- *In real life, we might use the skills in a job or if we own businesses we can use the information gather in the module.*
- *It's the language of business. Having Knowledge of accounting is beneficial if you want to start your own business.*
- *It helps us work on our finances better. It gives us insight on how to manage our accounts.*
- *For the future, it will provide financial understanding, eg. Debit orders, etc and it will help create budgets etc.*
- *Accounting is a big part of your life. You will be able to understand how your money will be spent and to budget.*
- *Learning about how stuff is calculated etc. E.g. VAT.*

- *To understand how important it is to manage your income and expenses.*
- *Everyone in business needs accounting and it provides knowledge on business concepts.*
- *It gives basic understanding in terms of accounting and how everything works.*
- *It's a big part of business, it's a key concept one needs to understand. It equips us to understand business concepts.*
- *I feel the purpose of Accounting 1 aids my understanding of accounting and allows me to revise on the basics and fundamentals of accounting allowing me to think and approach new accounting concepts and approaches more confidently and help me recall them more efficiently.*
- *I like accounting, it's my favourite subject. I like numbers especially financial numbers.*
- *I have a love hate relationship with accounting, but I chose accounting because it's something I like to do.*
- *To demonstrate to students what accounting entails so we can make a choice for our majors.*

10.6 Learning Attributes

This section described one of the affinities identified in the Interactive Qualitative Analysis (IQA) methodology, that of *learning attributes*. The learning attributes the participants acquired throughout the tutorial programme are documented in detail from Chapters Six to Nine. These learning attributes, or skills acquired, were listed in bullet form in conjunction with other affinities that identified the learning attributes of the participants, in Chapter 11. Researchers have proposed that "threshold skills" accompany the threshold concepts. They have also suggested the characteristics for "threshold skills" as 'transformative', 'integrative', 'troublesome', and 'semi-irreversible', and that all these must be practised (Thomas et al., 2014).

10.7 Conclusion

One of the concepts of the theoretical framework of this study was that of 'motivation'. Motivation studies have utilised the self-construct of 'self-efficacy', found in the Self-Efficacy Theory of Motivation. This self-construct was one of four factors found in the construct of Psychological Capital (PsyCap): those being 'hope', 'efficacy', 'resilience' and 'optimism'. This study has elected to use the Myers-Briggs Type Indicator as an extension of the limited PsyCap research conducted to date. The following chapter describes how this second system, the Myers-Briggs Type Indicator, was used for the understanding and development of one's self.

CHAPTER ELEVEN
MYERS-BRIGGS TYPE INDICATOR

11.1 Introduction

This chapter commences with an overview of the construct of Psychological Capital, with emphasis on the factor 'efficacy'. Thereafter the Self-Efficacy Theory of Motivation was utilised when analysing one of the constructs found in the theoretical framework, that of 'motivation'. This study has elected to use the Myers-Briggs Type Indicator, a personality theory with motivation factors, in order to analyse the motivation experienced by the participants. Thereafter the Eysenck Personality Theory was utilised in conjunction with the Myers-Briggs Type Indicator in order to classify the personality traits of the participants throughout the tutorial programme.

11.2 Psychological Capital

The psychological characteristics of the participants were considered as a measure to determine why some are able to negotiate the liminal space, while others fled and remain untransformed. The construct of Psychological Capital (PsyCap) looked at four factors that did not take intellect into account (Luthans, Youssef, et al., 2007), but rather the emotional capital that a student possessed, in order to pass through the liminal phase. These four factors were: 'hope', 'optimism', 'resilience' and 'efficacy' (Land et al., 2016). The Psychological Capital (PsyCap) factors may be used to explain why some students can successfully navigate through the liminal journey and why some students, who in spite of having the intellectual capabilities to do so, cannot (Land et al., 2016).

The first psychological capital factor was that of hope. This factor was affiliated with students' belief in their ability to adhere to a set of instructions in order to achieve their desired goals (Snyder et al., 2002). When confronted with academic adversity and problem solving, the students resolved these according to the amount of hope they possessed (Chang, 1998). The second psychological capital factor was that of 'efficacy'. This factor was affiliated with 'individualacy' and a student's belief that they were able to master the goals presented.

Students with a high sense of self-efficacy were more inclined to persevere when approached with a challenging task until they achieved mastery, whereas students with a much lower sense of self-efficacy were more inclined to surrender when faced with difficulty (Pajares, 2005; Schunk, 1991; Zimmerman, 2002). The third psychological capital factor was that of 'resilience'. This factor was seen as a student's ability to transform a negative situation into that of a positive one (Luthans, 2002), with resiliency being an attribute of a student or cohort of students that resulted in a positive conclusion (Masten & Reed, 2002). Examples of these attributes could be faith, humour, emotional stability, a positive perception etc. (Masten, 2001). The fourth psychological capital factor was that of 'optimism'. This factor, in the learning journey, related to student independence and self-determination regarding the mastery of learning goals (Shogren et al., 2006). This desire to master learning goals may be attributed to an expectation of positive results and the participation in goal-designed tasks (Scheier & Carver, 1985).

A research study found that engagement structured to strengthen the psychological capital of a cohort of students also yielded improved academic performance. Students were asked to complete an adapted PsyCap account prior to the submission of a written assessment, in order to determine if there was a relationship between this PsyCap account and the academic abilities of the students (Luthans, Avolio, et al., 2007). Participants in this study were asked to complete a Myers-Briggs Type Indicator semi-structured interview prior to commencing with the threshold concepts tutorial programme, and upon completion of it. The assessment results of the participants upon the completion of their study of Accounting 101 during their university's online learning programme is attached in this chapter (see Table 28) in order to analyse their performance based on this tutorial programme. The reason for doing so was elaborated on in Chapter Ten.

11.3 The Second System

As per Interactive Qualitative Analysis (IQA), if a research study has only one system, then only two research questions will arise:

- What are the elements of the single system?
- What are the relationships between these elements?

If a researcher implemented the use of at least two systems, then the third question asked is:

- What are the comparisons between these two systems? (Northcutt & McCoy, 2004).

As the study utilised the Myers-Briggs Type Indicator as the second system, this required the third research question to be asked (Northcutt & McCoy, 2004).

The Myers-Briggs Type Indicator was an instrument that was used for the understanding of one's self and the development of one's self. There are four mental approaches and two possible viewpoints one has of the world, that were specifically combined into types that pointed out the journey to the development of competence and awareness of an individual's decision-making, understanding and interaction with others (McCaulley & Martin, 1995). Despite the popularity of the Myers-Briggs Type Indicator, researchers have also identified limitations (Boyle, 1995) inherent with the use of the instrument and have also further indicated that it should not be utilised for career planning, making the Myers-Briggs Type Indicator popular for uses unrelated to its validity and reliability (Pittenger, 1993a). This study therefore used this instrument to assess the personality of each of the participants prior to the commencement of the threshold concepts tutorial programme and the implementation of the chosen methodology, being Interactive Qualitative Analysis (IQA). The personality of each of the participants upon the completion of the study was also assessed in order to determine if there were any changes to their personality, that would be attributed to how the participants learned Accounting 101 in a threshold concepts environment in a newly-designed online platform during the COVID-19 pandemic.

11.4 Motivation

11.4.1 Motivation During the COVID-19 Pandemic

During the Interactive Qualitative Analysis (IQA) interview, the participants were asked about how the lockdown affected them emotionally in order to determine how they were motivated to learn during the lockdown.

11.4.1.1 How the Lockdown Affected Them Emotionally

Participants had equal responses to the range of all possible responses as to how the lockdown affected them: no effect, negatively and positively. The participants who responded that the lockdown had no effect on them, indicated that the lockdown was unavoidable. One of the

participants indicated that he was accustomed to self-studying as he had attended boarding school in the year prior to university, while another participant indicated that even though the lockdown did not affect him emotionally, he felt it was better to study in a learning environment with other participants.

Participants who responded that the lockdown had a negative effect on them, indicated that the lockdown was depressing and that they did not know what to do. One of the participants indicated that as this was her first year of studying at a university, she was hoping for a lot more face-to-face interaction, and that the lockdown brought this additional disappointment to her life. Other participants indicated that the reason they did not elect to study at institutions like UNISA, a university that promoted self-studying, was that they were the type of participants who struggled to self-study, and that they preferred to learn in a face-to-face environment.

Participants who responded that the lockdown had a positive effect on them, indicated that even though the lockdown was overwhelming at first due to the high volume of work, it provided them with more time to study. Participants indicated that the lockdown presented them with the opportunity to catch up with their work, as they were falling behind during the weeks prior to the commencement of the lockdown. The remaining participants indicated that they utilised the lockdown productively, as it allowed them to feel calm, less stressed, and therefore helped them to concentrate more on the threshold concepts tutorial programme.

11.4.1.2 How They Were Motivated to Learn During the Lockdown

One of the participants indicated that the lockdown motivated him to get out of bed to study, and that by the end of the tutorial programme, his level of motivation was on pause. A few participants indicated that as the tutorial programme from the study was the only activity they had prior to the commencement of their online learning programme, they felt that it was an activity that allowed them to sustain their interest in the interim. Others had made timetables in order to achieve their goals as they were fearful of not completing their work or failing. Participants realised that they had work to attempt which they were determined to complete, as they were self-motivated to do so.

One of the participants indicated that she had her family as her support system and her past experiences to reflect upon in order to motivate her to keep up to date with the tutorial programme. Participants indicated that because they knew that there was a cohort of their peers participating in the tutorial programme, this motivated them to not only try to keep up to date with their tutorial attempts, but to also try to be ahead of the group as best they could.

Participants indicated that they realised that the Threshold Concepts Theory was crucial to know as it allowed them to progress throughout their learning journey and therefore, the discipline. They felt more comfortable when attempting the threshold concepts being tested as the tutorial questions were based on their prescribed textbook, which provided an element of familiarity.

Participants indicated that they were more focused with my step-by-step guidance and regular communication on the WhatsApp Messenger group chat and the individual WhatsApp Messenger chats, to ensure that each participant had attempted the tutorial questions and to ask if they needed assistance at any given point. One of the participants indicated that one of his new year's resolutions was to work hard, and that this focus provided by me during the lockdown motivated him to study.

As I communicated with the participants regularly and extended my assistance at least twice a week to them on an individual basis, they indicated that this allowed them to feel more comfortable to ask me questions in spite of them initially feeling nervous to communicate with me. Participants quickly realised that they would not have had as much time to fully focus their attention on this discipline if they were at university prior to the lockdown. As time passed, they realised that their knowledge of Accounting 101 had improved due to the time they invested in the tutorial programme, and they felt more confident to study with me as I assisted them to stay up-to-date and motivated them to work hard. Below are descriptions provided by the participants regarding how the lockdown affected them emotionally and what motivated them to learn during the lockdown.

- *The lockdown helped me because at campus I was behind with work and with you (Sasha) - you helped me through the chapters. It was beneficial. Because I know we have a group of students therefore I was always trying to be ahead and keep up with them so that I'm not left behind.*

- *It's very easy to get frustrated when you don't understand a concept and that could lead to me giving up on a section or concept. You can feel like giving up. The thing that helped me the most waking up earlier. I noticed when I woke up earlier, I was more productive.*
- *If not for the lockdown, I would have been able to get assistance from many individuals and now it's a struggle to work alone. The threshold concept helps me because it is an important thing to know. Going over the textbook every day. The tutorials you sent are based on the sections in the textbooks, so that's how I keep motivated to study. Asking you questions helps me stay up to date.*
- *I wasn't sure what to do. I had to make a timetable to study. Fear of getting my work done and failing.*
- *Didn't have too much of an effect, but it is always easier to study when you are with other students in a learning environment. Constantly looking at the group and all the tutorials and my accounting material is very visible in my room, therefore I'm always thinking of completing my work. The WhatsApp groups and concept tests are also a motivation.*
- *It did not affect me. The tutorials that you sent every week helped me because I had to make sure I attempt the questions.*
- *Forces you to get out of bed and do work. Not very motivated right now, I'm on pause.*
- *When enrolling in this study, I was a first year. So, I was hoping for a lot of human interaction. However, the pandemic stopped that, so I was a bit disappointed. Setting out action plans and goal setting.*
- *It's taken a toll, I'm one of those students where you must teach for me to understand and why I didn't study through Unisa. As much as we have a lot of material available such as videos and textbooks, I still prefer having someone who can physically teach me. I had to get used to adjusting to doing everything on my own. I knew that it was really helping me and the fact that you were there and was assisting me. I was moving forward and progressing in this module.*
- *It didn't affect me much as the lockdown was unavoidable. Because you (Sasha) always insisted that we do work and always checked on us.*
- *It was more positive because there was less stress. I knew I had work to do and I had to do it. I was self-motivated.*
- *It gave me more time to study but also overwhelming because we have a lot of work. I*

could not interact with lecturers immediately. Studying with you helped me be confident in studying accounting. When we were at campus, I did not have much time but now I have more time and I could do more.

- *It affected me a lot. Sometimes I need explanations and I get scared to worry you. You are too kind, and patient and you motivate me to work hard. I see an improvement and you helped me with many concepts.*
- *It did not affect me emotionally since I was at boarding school last year and always worked alone. I had a news year's resolution to work hard this year and I've noticed when there's no one guiding me I lose focus. Someone to push me and motivate me helped me stay motivated. I also did not want to disappoint you, therefore I was motivated to study.*
- *It helped to concentrate more. It made me calm. It was the only thing I had to do. It was something to keep me going and active.*
- *It was depressing because of the whole situation. My mum kept on telling me not to lose focus and my past experiences from 10th grade helped me not get left behind.*

11.4.2 Perceptions Upon Completion of the Threshold Concepts Tutorial Programme Participants Were Motivated to Learn in

The next question asked during the Interactive Qualitative Analysis (IQA) interview, after understanding how the participants were motivated to learn throughout the threshold concepts tutorial programme, was if they perceived the online learning environment designed to conduct the tutorial programme as productive, and the advantages and disadvantages thereof.

Productiveness of The Tutorial Programme

A few participants indicated that they realised that they had no choice but to interact in an online learning environment since the commencement of the lockdown. Participants also indicated that even though this tutorial programme was productive, that during a conventional face-to-face learning environment, the opposite would be true as most preferred the human interaction.

The remaining participants indicated that they found the tutorial programme to be productive as they too were productive. Participants further indicated that the tutorial programme was helpful as it allowed them to study many topics in the discipline and therefore learn many new

threshold concepts, which they also found to be of use. Other participants indicated that they were able to study more in the tutorial programme than they did in the face-to-face environment prior to the commencement of the tutorial programme. Those who were initially apprehensive, were no longer worried as they had become confident when learning Accounting 101. Other introverted participants indicated that they had become more confident when learning in this platform as they did not feel embarrassed to ask me questions because they were alone.

Some participants indicated that the online tutorial programme allowed them the opportunity to read the messages in our WhatsApp Messenger chats, and that this was like a consultation with notes, as opposed to a face-to-face consultation, where they could easily forget the explanations provided. Participants were also happy about being able to study at their own pace instead of waiting for the other participants to catch up to them. Overall, they indicated that they enjoyed the tutorial programme and that they were grateful for my help, as they were now able to identify the threshold concepts being tested and were confident enough to have a conversation regarding the threshold concepts of the discipline. They also indicated that threshold concepts would serve well to be incorporated into mainstream lectures and tutorials.

Advantages and Disadvantages of the Tutorial Programme

Participants used the tutorial programme as their motivation to study during the lockdown period. Most participants indicated that they utilised the factor of time available to their advantage. They indicated that the time allocated to them per tutorial was sufficient for them to firstly engage with the discipline content and then attempt the tutorial questions. Participants were also happy with the availability and flexibility of time granted to them as this allowed them to study at their own pace, and at any time that was suitable for them, in the comfort of their own homes, without being held to a strict timetable. They indicated that by not adhering to a university timetable, they were able to dedicate a whole day at a time when studying accounting without being confronted with the distractions at their university residence, as studying at their respective homes allowed them to fully concentrate.

The participants who did not study accounting in their schooling careers indicated that they utilised the available time to conduct more research prior to attempting the tutorial questions. They also indicated that if they were learning in a face-to-face environment, they would have conducted their research quickly and would not have acquired as deep a level of knowledge as they would have liked to. Participants who did, however, study accounting in their schooling careers, indicated that the tutorial programme refreshed their existing knowledge of accounting

as they were able to address any problems they had with me immediately, as opposed to having to wait for all the participants to meet in a weekly face-to-face environment. All participants felt that being able to ask me questions whenever they needed to, was a big advantage of the tutorial programme. As I indicated to the participants at the beginning of the tutorial programme that I was happy to be available to answer their questions at any time during the day, they felt that this offer allowed them to almost immediately resolve their queries without having to wait for an allocated consultation period as I was always available to them throughout the 24-hour day. Participants further indicated that they preferred being able to ask me questions directly, as they felt that the individual consultation over WhatsApp Messenger allowed them to express their thoughts without fear of being left behind or slowed down by the other participants.

The primary disadvantage that participants experienced was the absence of the face-to-face environment and interacting with others in order to learn from their mistakes or listen to their thoughts. A few participants indicated that there were instances where they did not have access to signal from their respective service providers or money to purchase data. One of the participants indicated that he had limited time available as the research conducted prior to attempting the tutorials was time-consuming. Another participant indicated that she preferred the structure a timetable offered her, but still utilised the available time to study at her convenience. A few participants also indicated that they did not encounter any disadvantages with the threshold concepts tutorial programme. Below are descriptions provided by the participants regarding whether they perceived the online learning environment designed to conduct the tutorial programme as productive, and the advantages and disadvantages thereof.

- *Yes, it was productive. I even gained confidence in studying accounting. Advantages - you gave us tutorials and time to study before going to the next tutorial. Disadvantages- I did not experience any disadvantages.*
- *Comparatively to being on campus no; however, based on the circumstances, yes. Advantages - More flexibility with time compared to being on campus where we have a set timetable. Disadvantage s- No face-to-face interactions. When you are in a class with other students it's much easier to come to grips with everything that's going on. You can identify concepts that might pose as an issue.*
- *It is quite productive, I could go back to read the messages compared to face-to-face*

help where I could easily forget what was explained. It's like having a consult with notes. Advantages - I have more time to ask questions and will be able to express my own thoughts as opposed to being in a group where you can be slowed down or feeling left behind because of the other students. I can address my misunderstandings more effectively one on one compared to being in a group. It takes up less time due to it being one on one tutoring as opposed to being in a group where everyone expresses their thoughts, which takes up a lot of time. Disadvantages - Data is a disadvantage due to cost.

- *Yes, very productive. It's a very good programme. It was very helpful. Before I was worried but now, I'm not. Advantages - I can ask questions directly to you. We can do the work at our own pace. It's a lot more helpful.*
- *Yes, I've done a lot more work with you than the lecturers. I was able to identify principles and concepts using threshold concepts. It should be incorporated in lectures and tutorials as it helps a lot. Advantages - you have a lot more time to yourself and we can ask questions throughout the day. Disadvantages - You are missing out on interactions with students at university. Missing out on learning from other students' mistakes.*
- *Yes, it was productive. Advantages - I can study at any time. Disadvantages - At campus I would have had to study at certain times due to attending lectures, etc.*
- *Yes. Advantages - It was a much-needed refresher. Can address any problems and queries instantly and did not have to wait for the entire group to work together. Disadvantages - Time was an issue. Time runs out very quickly. I could have done a better attempt at the tutorials if there were lectures on the topics.*
- *Yes, because we got to work at our own pace as opposed to waiting for others to catch up. Advantages - The students who did accounting it was easier for them to work at their own pace and if you didn't do accounting before you would find it difficult. Disadvantages - None.*
- *It was very productive. The threshold concepts are helpful. Advantages- Working at our own pace in the comfort of our home. We could interreact with you whenever we needed too over WhatsApp. Disadvantages - No face-to-face interaction. WhatsApp really helped but I would have preferred being in person.*
- *It was productive but not good for me because when I study, I like to participate with the person face-to-face, but due to the lockdown we have no choice. Advantages - I*

could complete the tutorial earlier and faster. It helped my catch up with campus work as it cleared up concepts. Disadvantages - I was not able to share my thoughts with others.

- *Yes, it was productive. I got a lot of work done and learnt a lot. It really helped especially during the lockdown. Advantages - I could work and do more research since I do not have a background in accounting. I worked at my own pace and had preparation time. Disadvantages - It's harder to get assistance.';*
- *Yes, I did enjoy the work more than I expected. It really helped me. Thank you for your help. Advantages - I was able to work at my own pace and work in my own time. You (Sasha) were always there to assist with my questions. Disadvantages - No one on one interaction and doing examples etc.*
- *Yes, during a normal situation it won't be productive but based on the circumstances, yes. Advantages - I can ask you any question via WhatsApp. Disadvantages - I might not have access to network or money to purchase data.*
- *For accounting I've done most of the work. I am learning stuff and I can have a conversation regarding accounting. Advantages - I can dedicate my entire day to one module and not have to go according to the university schedule we follow on campus. There are many distractions at my residence on campus which means at home I can concentrate more. Disadvantages - since I did not do accounting at school, I do not have a good foundation and there is no one to assist me. No face-to-face interactions meant we could not cover as much as we could.*
- *Yes. I really enjoyed it. It helped me a lot. Advantages - It gave me motivation to study during the lockdown. Disadvantages - None.*
- *Yes, it was, I was more focused. I was more confident compared to being in a classroom with other people. When I'm alone, I don't feel embarrassed. Advantages - I did not feel pressure to know everything. I could look at my notes etc. Disadvantages - I'm very laid back, I need structure otherwise I will not be focused. Not having structure and control was a disadvantage.*

11.5 Myers-Briggs Type Indicator Analysis

After conducting the Myers-Briggs Type Indicator (MBTI) semi-structured interviews (see Annexure 7) prior to and upon completion of the threshold concepts tutorial programme, the responses of each participant were populated into answer grids (see Table 17). Participants had to select either a or b, the option that most resonated with them, for each of the twenty questions asked in the semi-structured interview. This Myers-Briggs Type Indicator answer grid was designed in such a way as to determine which option in each of the pairs of attitudes exhibited and psychological processes are dominant. The total number of responses in each column a and column b were tallied and the highest option in each column a-column b pair was selected. The first column a-column b pair determined whether the participant exhibited an attitude of extroversion or introversion. The second column a-column b pair determined whether the participant possessed the psychological process of sensing or intuition. The third column a-column b pair determined whether the participant possessed the psychological process of thinking or feeling. The fourth column a-column b pair determined whether the participant possessed the psychological process of judging or perception (Dvusd, 2016).

Table 17: MBTI Answer Grid

Name:											
	a	b		a	b		a	b		a	b
1.			2.			3.			4.		
5.			6.			7.			8.		
9.			10.			11.			12.		
13.			14.			15.			16.		
17.			18.			19.			20.		
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

A Microsoft Excel spreadsheet was used to create a composite view of all sixteen participants' MBTI answer grids from prior to and upon completion of the threshold concepts tutorial programme (see Annexure 22), in order to determine if there were any changes to their personality, that would be attributed to how the participants learned Accounting 101 in a threshold concepts environment in a newly-designed online platform during the COVID-19 pandemic. Thereafter, the personality types of the participants were populated into the 16-personality type table (McCaulley & Martin, 1995).

Table 18: MBTI 16-Personality Type Table Prior to the Commencement of the Threshold Concepts Tutorial Programme

SENSING		INTUITION			
THINKING	FEELING	FEELING	THINKING		
ISTJ N=0 %=0	ISFJ N=0 %=0	INFJ N=1 %=6.25	INTJ N=0 %=0	JUDGMENT	INTROVERSION
ISTP N=0 %=0	ISFP N=1 %=6.25	INFP N=4 %=25	INTP N=0 %=0	PERCEPTION	
ESTP N=0 %=0	ESFP N=2 %=12.5	ENFP N=7 %=43.75	ENTP N=0 %=0	PERCEPTION	EXTRAVERSION
ESTJ N=0 %=0	ESFJ N=0 %=0	ENFJ N=1 %=6.25	ENTJ N=0 %=0	JUDGMENT	

Table 19: MBTI 16-Personality Type Table Upon Completion of the Threshold Concepts Tutorial Programme

SENSING		INTUITION			
THINKING	FEELING	FEELING	THINKING		
ISTJ N=0 %=0	ISFJ N=1 %=6.25	INFJ N=2 %=12.5	INTJ N=0 %=0	JUDGMENT	INTROVERSION
ISTP N=1 %=6.25	ISFP N=0 %=0	INFP N=4 %=25	INTP N=0 %=0	PERCEPTION	
ESTP N=0 %=0	ESFP N=1 %=6.25	ENFP N=3 %=18.75	ENTP N=1 %=6.25	PERCEPTION	EXTRAVERSION
ESTJ N=0 %=0	ESFJ N=0 %=0	ENFJ N=2 %=12.5	ENTJ N=1 %=6.25	JUDGMENT	

11.6 Eysenck's Personality Theory

Greek physician, Hippocrates, c. 400 BC, developed four humours, that were later further elaborated on by Galen, c. 190 AD. These four humours, or four temperaments are that of sanguine, choleric, melancholic and phlegmatic. From the range of motivation factors, Jung in 1978, identified two attitudes exhibited: extraversion and introversion, that he then combined with the four psychological processes he identified: sensing, intuition, thinking and feeling. In 1947 however, Eysenck conducted a study using these four temperaments and with two dimensions that he identified: extraversion-introversion, and emotional stability-emotional instability. Eysenck then populated each quadrant with personality traits (see Figure 15) (Bencsik et al., 2016).

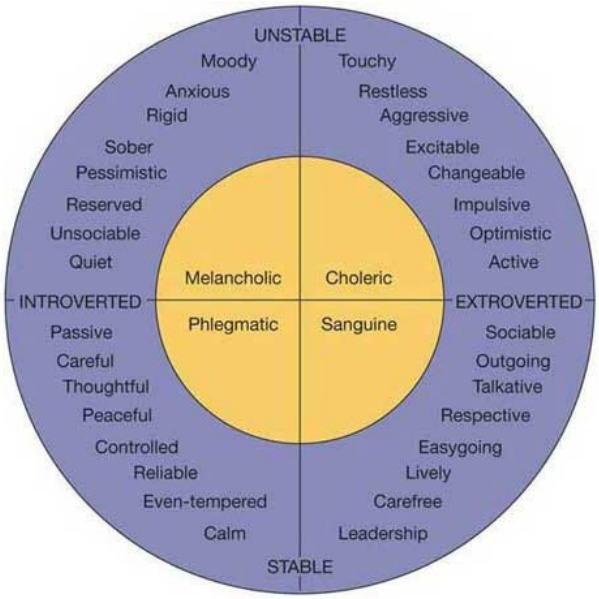

Figure 15: Eysenck's Personality Traits

11.7 Myers-Briggs Type Indicator and Eysenck's Personality Theory Analysis

Each of the four temperaments mentioned in section 11.6 have been found to compare to the Myers-Briggs Type Indicator codes in 1958. Melancholic, initially known as black bile by Hippocrates, compared to the MBTI codes of IST and INJ. Choleric, initially known as yellow bile by Hippocrates, compared to the MBTI codes of EST and ENJ. Sanguine, initially known as blood by Hippocrates, compared to the MBTI codes of ESF and ENP. Phlegmatic, initially known as phlegm by Hippocrates, compared to the MBTI codes of ISF and INP (Eric, 2009). Due to this connection between the MBTI personality types and the four temperaments, I was then able to classify each MBTI personality type as seen in Table 18 and 19, to its relevant temperament.

Table 20: MBTI 16-Personality Type Table Prior to the Commencement of the Threshold Concepts Tutorial Programme with the Relevant Temperaments

SENSING		INTUITION			
THINKING	FEELING	FEELING	THINKING		
ISTJ N=0 %=0	ISFJ N=0 %=0	INFJ N=1 %=6.25	INTJ N=0 %=0	JUDGMENT	INTROVERSION
ISTP N=0 %=0	ISFP N=1 %=6.25	INFP N=4 %=25	INTP N=0 %=0	PERCEPTION	
ESTP N=0 %=0	ESFP N=2 %=12.5	ENFP N=7 %=43.75	ENTP N=0 %=0	PERCEPTION	EXTRAVERSION
ESTJ N=0 %=0	ESFJ N=0 %=0	ENFJ N=1 %=6.25	ENTJ N=0 %=0	JUDGMENT	

Legend:

Melancholic

Choleric

Sanguine

Phlegmatic

Table 21: MBTI 16-Personality Type Table Upon Completion of the Threshold Concepts Tutorial Programme with the Relevant Temperaments

SENSING		INTUITION			
THINKING	FEELING	FEELING	THINKING		
ISTJ N=0 %=0	ISFJ N=1 %=6.25	INFJ N=2 %=12.5	INTJ N=0 %=0	JUDGMENT	INTROVERSION
ISTP N=1 %=6.25	ISFP N=0 %=0	INFP N=4 %=25	INTP N=0 %=0	PERCEPTION	
ESTP N=0 %=0	ESFP N=1 %=6.25	ENFP N=3 %=18.75	ENTP N=1 %=6.25	PERCEPTION	EXTRAVERSION
ESTJ N=0 %=0	ESFJ N=0 %=0	ENFJ N=2 %=12.5	ENTJ N=1 %=6.25	JUDGMENT	

Legend:

Melancholic

Choleric

Sanguine

Phlegmatic

The reason this study used both the Myers-Briggs Type Indicator and the Eysenck's Personality Theory was that the combination of the two personality instruments allowed the personality traits of the participants throughout the threshold concepts tutorial programme as per the affinities generated during the Interactive Qualitative Analysis (IQA) methodology process, to be recorded accurately. The two dimensions identified by Eysenck were utilised for the study's personality traits figure. The first dimension was that of the two attitudes identified, extraversion and introversion, which was originally founded by Jung and later used by Myers-Briggs. The second dimension was that of emotional stability and emotional instability. The second dimension was adapted to apply to the study, by incorporating the concept of liminality and the perceptions of the participants.

Eysenck then populated each of the four quadrants with personality traits that he identified based on the four humours by Hippocrates, later known as the four temperaments by Galen. This study then added an additional layer to Eysenck's Personality Theory that incorporated the personality traits of the participants that were identified throughout the study prior to and upon completion of the threshold concepts tutorial programme. These personality traits were identified from the introductory semi-structured interviews conducted and the affinities generated during the Interactive Qualitative Analysis (IQA) methodology process.

The MBTI personality codes identified for each of the participants prior to and upon completion of the threshold concepts tutorial programme, were also utilised. Surrounding the layer that the study added to the Eysenck's Personality Theory, were the MBTI codes and any change in MBTI codes that the participants had undergone as a result of how they learned Accounting 101 in a threshold concepts environment in a newly-designed online platform during the COVID-19 pandemic. This description clearly outlined how the first system, the Interactive Qualitative Analysis (IQA) methodology, compared to the second system, the Myers-Briggs Type Indicator, and therefore answered the third question when conducting the Interactive Qualitative Analysis (IQA) process. The participants preconceptions, the affinities generated in the study relating to the participants' personality or 'learning attributes' and any other relevant affinities, as well as the MBTI codes, were identified from the pre-liminal phase to the post-liminal phase of the participants' learning of the threshold concepts of Accounting 101 (see Figure 16).

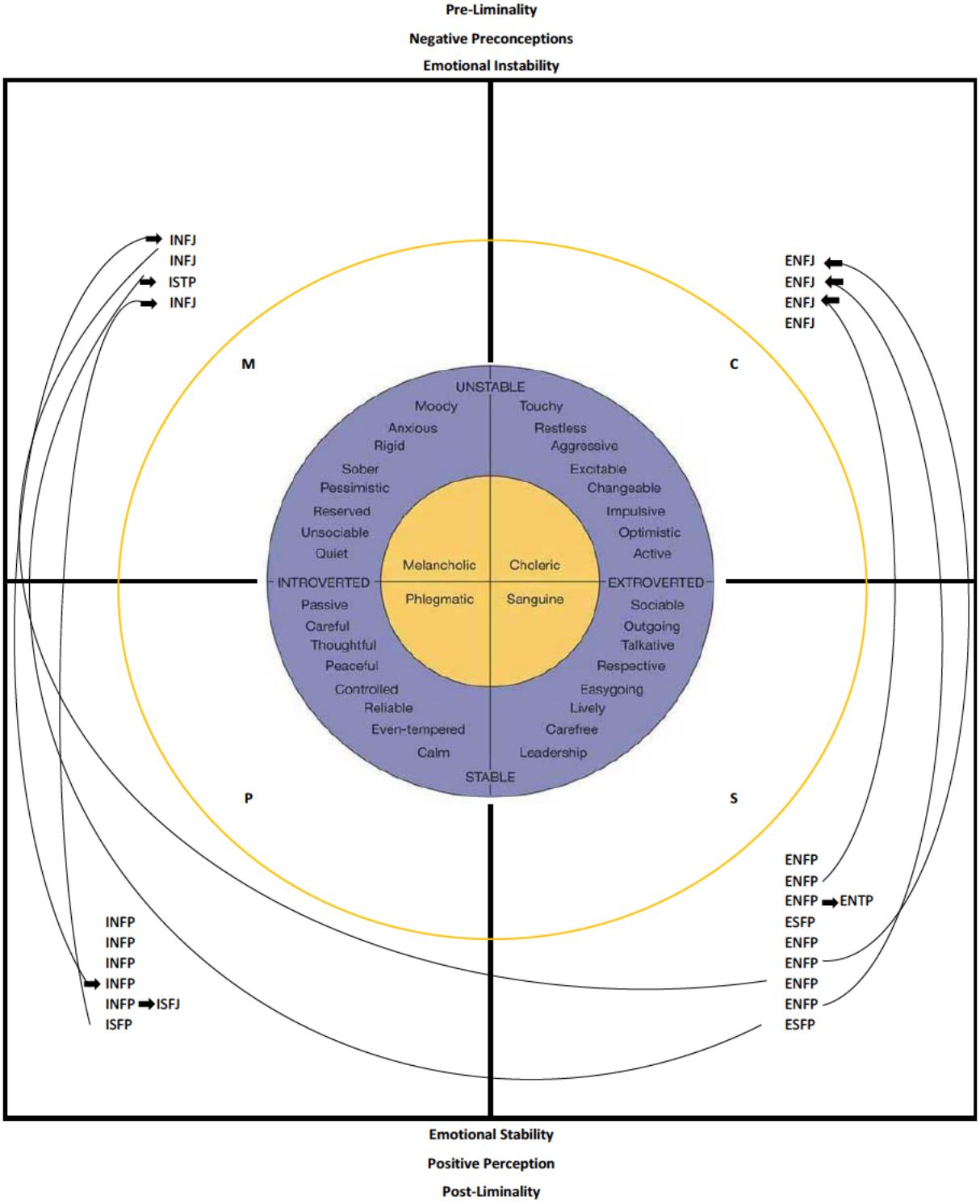

Figure 16: Myers-Briggs Type Indicator and Eysenck Personality Theory showing the Personality Traits of the Participants throughout the Threshold Concepts Tutorial Programme

Legend:

M	Melancholic: See Table 22
C	Choleric: See Table 23
S	Sanguine: See Table 24
P	Phlegmatic: See Table 25

Table 22: Extracts from Participants Identified throughout the Threshold Concepts Tutorial Programme Indicating Melancholic Personality Traits

Beginning undoable module
Beginning didn't think it would be good
Negative mindset of Accounting and myself
Nervousness at onset
Beginning boring
Challenge to self-study
Challenging at first
Frustrated with challenges & fatigues
Intimidated
I doubt myself a lot, even when I am right
Scary to learn new things at first
Did not like Accounting at first.
Onset I felt scared, confused, lost, nervous and that I won't understand
Frustrated, overwhelmed
I'm pessimistic
Didn't think I could do Accounting
Slow worker, careless mistakes, need to be more focused
Still get anxiety
At end I still found it really hard to identify and grasp basics
Overthink and get confused
At first, I didn't want to touch Accounting
Difficult learning to adapt

Table 23: Extracts from Participants Identified throughout the Threshold Concepts Tutorial Programme Indicating Choleric Personality Traits

Developed how to apply myself
Developed new perspective of Accounting
Hard worker
Focused
Ability to learn and tackle new concepts
Ability to understand
Knowing how to analyse and understand
Easily spot concepts and answer questions quicker & in depth
Interpretation and self-learning skills
Productive
More informed, self-driven, mentally strong
Helped me to stop doubting myself
I give my opinions
Self-motivated
Felt I needed to be up to date
Alert
I completed tasks even if it didn't make sense
Never give up while stuck on a problem
Perseverance
Hardworking
Dedicated
Determined to conquer module
Picked up skills I cannot forget
Make connections to concepts
Work ethic improved
Identify mistakes and cleared them after learning from feedback
Timeous
Deeper understanding
Understanding improved immensely
Understand instead of just memorise

Tricky - took time to understand
Learn/work at a faster pace
Learning new methods & Improve learning style

Table 24: Extracts from Participants Identified throughout the Threshold Concepts Tutorial Programme Indicating Sanguine Personality Traits

Appreciate challenges
Saw challenges as positive to learn from
No challenges
Cheerful
Put my mind to it and I can do it
Hope
Enjoyed working in group
Enthusiastic
Positive
Good
Fun
Happy place
Excited
Inspired
Uplifted
Enjoyed learning something new
Look at myself and subject more positively and not beat myself for getting things wrong
Easy and I loved it
Stress free to understand
Effective
Proud of myself
Confident to ask Sasha questions
Confident
See myself performing exceptionally well - stellar performance
Accomplishment
I worked hard and will do well

Grew in understanding and self
Learned quickly
Self-aware and self-informed
Different person
I like to try new things
Interested in threshold concepts programme
Now I want to pick up book and engage
I tried and it was good
Proud
Felt like I belong
Enlightened
Eye opener - viewed Accounting differently
Looked at Accounting in a reflective way in keeping with the threshold concept
Aware of importance of Accounting and how it impacts our lives
Learned reasoning behind focusing on concepts and applying them more appropriately
Performed better than expected

Table 25: Extracts from Participants Identified throughout the Threshold Concepts Tutorial Programme Indicating Phlegmatic Personality Traits

Comfortable
Kindness
Patient
Not overthinking – controlled mindset
Calm state of mind, attentive and concentrate
Pleasant
Adaptable
Curious
Comfortable going at my own pace
No pressure, take my time
Less stressful
Do tuts with ease
Liked working alone

Independent
Taught me to learn alone
Feel at ease

11.8 Conclusion

Tables 18-21 have shown the MBTI codes of each participant prior to the commencement of and upon completion of the threshold concepts tutorial programme. Figure 16, however, has shown the MBTI codes and any potential changes in MBTI codes between either the same quadrant or another quadrant as per the Eysenck Personality Theory. The potential changes (Carlyn, 1977) the participants have exhibited in their attitude and psychological processes for each of the four pairs identified in the Myers-Briggs Type Indicator have also been recorded (see Table 26). The potential changes in the MBTI questions asked prior to the commencement of and upon completion of the threshold concepts tutorial programme (see Table 27), indicated the change in the personality of the participants. Upon the completion of the seven-week long threshold concepts tutorial programme, the participants then went on to commence their university's online learning programme. When this was completed for the first semester, the assessment results of each participant for the discipline of Accounting 101 was obtained (see Table 28).

Table 26: Changes in MBTI Type Classification for Each Participant

	No Change In E-I Type	No Change In S-N Type	No Change In T-F Type	No Change In J-P Type	No Change In Any Type	Change In E-I Type	Change In S-N Type	Change In T-F Type	Change In J-P Type	MBTI Code Prior To Commencement Of Threshold Concepts Tutorial Programme	MBTI Code Upon Completion Of Threshold Concepts Tutorial Programme
1	√	√	√	√	√					INFP	INFP
2	√	√		√				√		ENFP	ENTP
3	√	√	√	√	√					ESFP	ESFP
4	√	√	√						√	ENFP	ENFJ
5	√	√						√	√	ENFP	ENTJ
6		√	√			√			√	ENFP	INFJ
7	√	√	√						√	INFJ	INFP
8	√	√	√						√	ENFP	ENFJ
9	√		√				√		√	INFP	ISFJ
10	√	√	√	√	√					ENFJ	ENFJ
11		√		√		√		√		ESFP	ISTP
12	√		√				√		√	ISFP	INFJ
13	√	√	√	√	√					ENFP	ENFP
14	√	√	√	√	√					INFP	INFP
15	√	√	√	√	√					INFP	INFP
16	√	√	√	√	√					ENFP	ENFP

Table 27: Changes in MBTI Questions Asked Prior to Commencement of and Upon Completion of the Threshold Concepts Tutorial Programme for Each Participant

	No Change In Questions Asked	Number Of Questions Changed Upon Completion	% Of Questions Changed Upon Completion	MBTI Code Prior To Commencement Of Threshold Concepts Tutorial Programme	MBTI Code Upon Completion Of Threshold Concepts Tutorial Programme
1		6	30	INFP	INFP
2		6	30	ENFP	ENTP
3		4	20	ESFP	ESFP
4		4	20	ENFP	ENFJ
5		10	50	ENFP	ENTJ
6		5	25	ENFP	INFJ
7		4	20	INFJ	INFP
8		6	30	ENFP	ENFJ
9		10	50	INFP	ISFJ
10		3	15	ENFJ	ENFJ
11		5	25	ESFP	ISTP
12		8	40	ISFP	INFJ
13		5	25	ENFP	ENFP
14	√	0	0	INFP	INFP
15		3	15	INFP	INFP
16		4	20	ENFP	ENFP

Table 28: Accounting 101 Assessment Results After the Completion of the Threshold Concepts Tutorial Programme for Each Participant

	Test 1 %	Test 2 %	Test 3 %	Concept Tests %	Final Mark %
1	96,67	83	53	73	77
2	93,33	97	73	98	89
3	100	90	67	100	87
4	100	93	70	98	89
5	86,67	50	43	85	62
6	93.33	67	63	94	76
7	83,33	53	47	75	62
8	96,67	87	67	100	85
9	93,33	97	73	100	89
10	96,67	70	60	99	78
11	90	90	47	99	78
12	93,33	67	40	99	70
13	60	80	53	54	63
14	100	77	43	100	76
15	100	87	70	79	85
16	86,67	37	40	74	57

The next chapter discusses the findings of the study relevant to the literature reviewed in both Chapters Two and Three, the Theoretical Framework and Literature Review.

CHAPTER TWELVE
DISCUSSION OF FINDINGS

12.1 Introduction

In this study, the phases of the participants' learning journey were used to discuss the findings of the study in relation to the literature reviewed. This commenced with the preconceptions of the participants in the pre-liminal phase. This was followed by the effective teaching and transformative learning, as well as the troublesome affect in the liminal phase. This was concluded with the progression to mastery of the discipline and the affective journey the participants encountered. The literature chapters assisted to either confirm, challenge or add new understandings to the existing bodies of knowledge based on the findings in the study. The affinities generated in Phase One of the Interactive Qualitative Analysis (IQA) methodology were then utilised as sub-sections to discuss the findings in detail relevant to the literature phases reviewed.

12.2 The Preconceptions of Non-Major Accounting 101 Students in the Pre-Liminal Phase of Learning

12.2.1 Perceptions (Pre-Liminality)

The findings for this phase of the learning journey, were that of *perceptions*, an affinity generated in the Interactive Qualitative Analysis (IQA) methodology. The perceptions in this phase referred to that of the preconceptions of the participants in the pre-liminal phase of learning. The participants selected to conduct the study were students who were studying Accounting 101 as one of their compulsory, first-year, non-major disciplines in their chosen programmes.

Preconceptions

This study utilised non-major accounting students as the participants. Other studies have utilised non-major accounting students as well as students who are majoring in accounting in order to gauge their perceptions of the discipline (Fisher & Murphy, 2006). Researchers have indicated that it is beneficial to gauge the preconceptions that students possessed prior to them entering the classroom, as these preconceptions may not be aligned to the discipline content, and may instead be based on stereotypical views (Meyer et al., 2010). As such, the participants were asked what their perception of Accounting 101 was prior to the commencement of the study, with the use of a 'Getting to Know You' semi-structured interview.

The preconceptions that almost all of the non-major accounting participants possessed in the pre-liminal phase of learning, prior to the commencement of the threshold concepts tutorial programme, were negative in nature. There is a plethora of research that confirmed this pre-conceived disposition (Azevedo & Sugahara, 2012; Fisher & Murphy, 2006; Gronow & Morrison, 2017; Meyer & Land, 2006; Partin & Haney, 2012). These negative preconceptions were due to the worldview that the participants possessed of the discipline, based on for example, television, movies and global events (Meyer & Land, 2006; Meyer et al., 2010; Miley, 2005). Negative preconceptions are also known as "epistemological obstacles", and can be attributed to cultural factors that participants have been exposed to throughout history (Artigue, 2001, p. 201; Radford, 1997). Some examples of the negative preconceptions of the participants were that they found accounting to be traumatic during their schooling careers. They also perceived accounting to be a discipline that mainly comprised of vast amounts of mathematical calculations with a limited theoretical component. Other participants perceived accounting to be the language of business and used vague terminology to describe their preconceptions.

Non-major accounting students in particular encountered these affective issues, i.e. negative preconceptions, when approaching the discipline of accounting, as they perceived accounting to be a compulsory discipline that was rigid in nature, and a discipline that they did not elect as one of their majors in their chosen programmes, creating troublesomeness in an affective form, even prior to the commencement of the learning of the discipline content (Land et al., 2016; Meyer & Land, 2006; Meyer et al., 2010). These affective issues brought further affective issues, for example, students' motivation to learn a non-major discipline, of which they had limited to no knowledge of the relevant discipline, and therefore limited to no

knowledge of the relevance of the discipline in their chosen programme (Chittleborough et al., 2005; McGuigan & Kern, 2010; Partin & Haney, 2012; Urban-Lurain & Weinshank, 2000).

If participants failed to perceive the relevance of the discipline of accounting in their chosen programme, then this could lead to them being disconnected from the learning journey in the pre-liminal phase, the point before entering the liminal phase of learning, because they were fearful of engaging with a discipline that they were not motivated to learn (Khan, 2014; Meyer et al., 2010). Some examples of the fearfulness the participants possessed were that they perceived accounting to be challenging, scary, confusing and even traumatic during their schooling careers. Other participants who had not studied accounting in their schooling careers, indicated that they felt insecure as they had to grasp the concepts in the same time period as participants who did possess a prior knowledge of accounting. This led participants to initially perceive themselves as being unable to understand the discipline, and therefore incapable of excelling.

Other participants indicated that they even though they found accounting to be easy in their schooling careers, they also perceived it to be boring and insignificant and just a discipline that they had to complete in order to progress to their second year of studies (Azevedo & Sugahara, 2012; Fisher & Murphy, 2006; Gronow & Morrison, 2017; Khan, 2014; McGuigan & Kern, 2010; Meyer et al., 2010).

Only a few participants indicated that they were hopeful and fully focused on working hard to try their best to understand this new discipline as they possessed a positive preconception of the discipline of accounting. Limited studies have found the profession of accounting to be positive to a certain degree, but still concluded an overall negative perception in nature (Fisher & Murphy, 2006).

Upon the completion of the programme, in the IQA interview, participants were asked how they perceived Accounting 101 after having completed studying a semester's worth of the discipline content. This was conducted in order to determine if there were any changes to the participants' ways of thinking regarding Accounting 101. These findings are elaborated on in 12.5 of this chapter.

12.3 Effective Teaching and Transformative Learning

The findings for this phase of the learning journey, were that of *demystified threshold concepts infused materials* and *newly adopted holistic approach to learning*, affinities generated in the Interactive Qualitative Analysis (IQA) methodology.

12.3.1 Demystified Threshold Concepts Infused Materials

The finding for this sub-section was that of *demystified threshold concepts infused materials*, an affinity generated in the Interactive Qualitative Analysis (IQA) methodology. This sub-section was divided into two parts, commencing with the selection of the threshold concepts for Accounting 101, followed by the threshold concepts tutorial programme for Accounting 101 which contained examples from the reflective learning journal entries of the participants for each threshold concepts tutorial question found in Chapter Ten.

12.3.1.1 Threshold Concepts for Accounting 101

The reason that the Threshold Concepts Theory was appealing was that it was one of the options made available to the schools of teaching and learning that provided discipline experts with a platform to explicitly define the discipline-specific ways of thinking and discipline-specific ways of practising (Barradell, 2013; Meyer & Land, 2006). The Threshold Concepts Theory allowed for the determination of which learning outcomes of the discipline content of Accounting 101 represented "seeing things in a new way", as a threshold concept was likened to that of a portal that opened up a new way of thinking, that transformed the understanding of a student and allowed them to progress to the mastery of the discipline (Cousin, 2010; Land et al., 2005; Meyer & Land, 2003, 2006; O'Mahony et al., 2014).

In order for the participants to improve their understanding and learning of the discipline content, and therefore transform their way of thinking, as the discipline expert I had to commence with a deep analysis of the discipline content of Accounting 101 in order to identify the threshold concepts of the chosen discipline in manner that differed from the traditional teaching conventions (Meyer & Land, 2006; Shanahan et al., 2016). An analysis of each learning outcome found in the prescribed textbook was conducted. My perception of the discipline of Accounting 101 was based on my experiences when studying this discipline for

the first time as a student, as well as my experiences when teaching this discipline to different cohorts of students over the years, in order to empathise with that of a student's perception. This shift in perception allowed me to reflect upon how I encountered the challenging learning outcomes of the discipline. It also allowed me to reflect upon how I currently perceived these learning challenges as a discipline expert having mastered the concepts, eager to impart the experiences gained from the journey of reflection, in order to assist the participants to also successfully navigate their way through the liminal journey. When reflecting on my experiences when teaching this discipline, I had to be cognisant of the misconceptions my prior students possessed as well as any learning outcomes I had not considered to be a potential epistemological barrier to their learning, and therefore any further potential threshold concepts. Based on the nature of the Threshold Concepts Theory, I also had to determine which of the learning outcomes the participants had to grasp in order to master the discipline (Brunetti et al., 2014; Easdown & Wood, 2012; Fortune et al., 2012; Karunaratne et al., 2016; Meyer & Land, 2006; Meyer, 2008; Meyer et al., 2010; Mills & Wilson, 2014).

The identification of a threshold concept was not as easy as I expected it to be. Some researchers indicated that they identified a limited number of threshold concepts with difficulty, while others experienced this process to be impossible as they could not reach consensus (Magdziarz, 2016; Meyer & Land, 2006; Meyer, 2008; Wuetherick & Loeffler, 2013). The reason the identification of a threshold concept was considered to be difficult and laborious was that the threshold concept "lies in the eyes of the beholder", and will therefore be perceived differently amongst a group of discipline experts (Burch et al., 2015; Decker, 2006; Meyer et al., 2010). As I was the only researcher to identify the threshold concepts of the chosen discipline, the need for me to reach consensus with other conflicting perspectives was eliminated (Khan, 2014).

This process of identifying the threshold concepts of a discipline compelled me to document a detailed explanation of each threshold concept that I identified and to then prioritise these discipline-specific threshold concepts into a conceptual framework. The Threshold Concepts Theory therefore had a further advantage of ensuring that discipline experts not only focused on the method of their teaching, but also on the theoretical pillars of the discipline (Barradell, 2013; Brunetti et al., 2014; Lucas & Mladenovic, 2007; Meyer & Land, 2006; Meyer, 2008). The effective teaching method that the Threshold Concepts Theory has provided discipline experts with has been under-utilised when conducting research in the field of education and the

chosen discipline of the discipline expert. Therefore, I attempted to identify a set of discipline-specific threshold concepts for Accounting 101, that I did not deem to be definitive, as I accounted for the fact that the Threshold Concepts Theory was still fairly new, as well as that of the advancement of the understanding of the discipline content over time (Davies, 2012; Meyer, 2008). I have therefore found that once my participants understood the learning outcomes that I deemed to be threshold concepts for Accounting 101, it had the effect of changing the way the participants thought about the discipline.

Tutorial questions for the threshold concepts tutorial programme were then created, that were infused with this set of discipline-specific threshold concepts. These threshold concepts possessed an affective nature, as when the participants interacted with them, they believed in these threshold concepts, as opposed to formulating their own subjective understanding of the learning outcomes of the discipline. Therefore, the selection of the threshold concepts of a discipline, and the utilisation thereof, are both emotionally-driven. The affective nature of one of the Threshold Concepts Theory characteristics, of 'troublesomeness', and the emotions evoked (Atherton et al., 2008), are elaborated on in 12.4 of this chapter.

12.3.1.2 Threshold Concepts Tutorial Programme for Accounting 101

Upon the identification of the threshold concepts of the chosen discipline, tutorial questions were created for the threshold concepts tutorial programme, that were infused with this set of discipline-specific threshold concepts as opposed to the entire body of discipline content. The tutorial programme provided the study with a platform to highlight these threshold concepts, also known as the "jewels in the curriculum", and therefore promote teaching and learning within the discipline of Accounting 101 (Cousin, 2008; Frank, 2006; Karunaratne et al., 2016; Meyer & Land, 2003; 2006, p. 150; Meyer et al., 2010, p. 61). In order to determine if these non-major accounting participants' thinking had transformed to that of an accountant, scenarios from everyday life were utilised in the threshold concepts infused tutorial questions, as the negative preconceptions that most of the participants possessed indicated that they failed to understand the relevance of the discipline of accounting in the real world (Land et al., 2016; McGuigan & Kern, 2010; Meyer & Land, 2006; Meyer, 2008; Meyer et al., 2010, p. 75; O'Mahony et al., 2014).

Some examples of the transformation of the participants' thinking to that of an accountant, were that they had successfully learned the definition of the Threshold Concepts Theory and they went on to further explain why they thought these concepts were classified as threshold in nature. They further indicated that they identified that these threshold concepts possessed the characteristics of the Threshold Concepts Theory, highlighting those of 'transformation', 'integration' and 'troublesome', and that these threshold concepts had the ability to change the way they thought. One of the participants indicated that in addition to him finding the threshold concepts explanations to be useful, he also decided to substitute his name with "student" in the tutorial question provided in order to immerse himself in the threshold concepts scenario, which also proved to be useful to him. Participants who had answered the tutorial questions correctly indicated that the threshold concepts explanations provided them with a new way of thinking when approaching an accounting tutorial question.

The threshold concepts infused tutorial questions were designed to be familiar in nature to the participants by using adapted questions from the textbook the participants were prescribed. The design of the prescribed textbook was appealing as it also provided participants with a story in order to teach them accounting. The continued use of the chosen story or fairy tale (Miley, 2005) was used in the tutorial questions. The White Rabbit was used to inspire the use of two pet rabbits as the characters of the everyday life story-oriented tutorials to teach the participants Accounting 101 threshold concepts. This design was an innovative and appropriate method of assessment for this study (Biggs, 2003; Decker, 2006; McGuigan & Kern, 2010; Meyer & Land, 2003, 2006; Meyer, 2008), that allowed participants to transition from something familiar, the fairy tale *Alice in Wonderland* and rabbits, towards something unfamiliar that students already possessed negative preconceptions of, namely Accounting 101.

The innovation offered when designing the tutorial questions, was the amalgamation of the Embedding Threshold Concepts (ETC) practice-theory connection (Meyer & Land, 2006) with the practice-theory-practice connection (Hedges, 2014), with the purpose of a fairy tale (Miley, 2005). The everyday life stories about rabbits were a method of assessment used to communicate two levels of meaning to the students i.e. the purpose of a fairy tale. The first level of meaning was the superficial level, that told a story about rabbits in an everyday life scenario and the second level of meaning was the deeper level, that provided the participants with the understanding as to which concepts were accounting threshold concepts.

The current approach to teaching is that of a student-driven nature, as opposed to that of the traditional teacher-driven nature (Kandlbinder, 2014). Some examples of the student-driven nature of the participants, were that they indicated that they were willing to utilise the threshold concepts programme to their benefit at the commencement of the pandemic in the newly-designed online platform, as they knew that they had to engage with the lecture content provided by their relevant discipline experts before attempting the threshold concepts tutorial questions.

The participants were provided with the tutorial solution after they had attempted the tutorial question, so that they could navigate their own learning journey, with me as their facilitator. Participants who engaged with the lecture content indicated that they felt the threshold concepts tutorials were more effective in helping them to obtain the DP requirements that they needed to fulfil. Participants indicated that they were happy to work at their own pace when completing the tutorial questions as this allowed them to work in advance and receive help from me at any time that suited them, day or night.

The design of each tutorial solution included a detailed accounting explanation that was typed in a user-friendly bullet format with many short sentences for ease of reading and understanding. This accounting explanation was followed by a detailed threshold concepts explanation that utilised the characteristics of the Threshold Concept Theory and an explanation per characteristic as to why the particular concept was deemed to be threshold in nature. This Threshold Concepts Theory explanation was part of the innovation that was offered when designing the Accounting 101 threshold concepts tutorial questions. The reason that participants were introduced to the detailed threshold concepts explanation as the last step of each tutorial question, was that novice participants ran the risk of learning threshold concepts as a "ritualised" form of knowledge if introduced too early in the learning journey (Davies, 2012; Meyer & Land, 2006, pp. 82, 100). Once the discipline-specific epistemological barriers were identified, I had to reconceptualise my perception of these barriers by translating the discipline-specific jargon to that of an English specific context that participants could easily understand before their perception was transformed to that of a discipline-specific one. The detailed accounting and threshold concepts explanations provided to the participants were explained using simple English. They comprised of detailed, step by step explanations, listed in a bullet format, therefore allowing participants to read and understand with ease as these explanations went on to further describe the discipline-specific perspective (Balibar, 1978;

Gascon & Nicolas, 2017; Meyer & Land, 2006; Meyer et al., 2010; O'Mahony et al., 2014).

Some examples of the demystified threshold concepts infused materials, the tutorial questions, were that participants indicated that these explanations explained each threshold concept in a user-friendly manner that made it easier for participants to understand exactly when and exactly how to use them, as well as how they were integrated, as per the detailed step by step explanations provided. Participants also indicated that these explanations allowed them to attempt similar tutorial questions in the future with ease as they no longer considered these concepts to be vague. They found that these threshold concepts explanations allowed them to identify and therefore correct any misunderstandings and any errors made. Those who had studied accounting in their schooling careers, indicated that the threshold concepts explanations assisted them to revise and confirm the understanding that they already possessed, as well as to improve upon their knowledge by allowing them to understand the aspects of the topic that they did not understand before. Overall, participants indicated that they identified that the purpose of the tutorials was not just to learn Accounting 101 threshold concepts, but to also utilise the demystified design of the tutorial questions in order to acquire a deeper understanding of the threshold concepts of the discipline and therefore think in the discipline. Participants further indicated that they were very happy with their performance and that they had adapted to learning in a threshold concepts tutorial environment (Dost et al., 2020).

I found that once the participants understood the design of the tutorial questions, the most important part being that of the demystified threshold concepts explanations, they were then able to utilise the tutorial questions to acquire a deeper understanding of the threshold concepts of the discipline. The demystified tutorial design has the effect of potentially contributing to the existing body of Embedding Threshold Concepts (ETC) project knowledge.

Upon completion of the study, participants were asked how they perceived the Threshold Concepts Theory after having completed a semester of the discipline content in a threshold concepts tutorial programme. These findings are elaborated on in section 12.5 of this chapter.

12.3.2 Adopting a Holistic Approach to Learning

The findings for this sub-section, was that of a newly *adopted holistic approach to learning*, an affinity generated in the Interactive Qualitative Analysis (IQA) methodology.

As this study had conducted an analysis of the epistemological barriers to the participants' learning of Accounting 101 in the form of the threshold concepts of the discipline, innovative methods were then implemented, being that of my threshold concepts tutorial programme, to free up these barriers. This allowed the participants to feel comfortable enough to enter their liminal phase of learning by using the threshold concepts in order to acquire an understanding of the discipline (Meyer, 2008).

Once the participants commenced with their learning of Accounting 101, most of whom were exposed to the discipline for the first time, they were then in a position to acquire a new style of thinking about Accounting 101 from the commencement of learning in the threshold concepts tutorial programme as the participants progressed from mimicry to actively engaging in the discipline, acquiring a deeper level of understanding in the liminal phase of learning. Participants were also encouraged to submit a reflective learning journal upon the completion of each threshold concepts tutorial question so that they could analyse their position in their liminal phase of learning (Cronin, 2012; Meyer & Land, 2006; Meyer, 2008).

Some of the participants who had not studied accounting in their schooling careers, indicated that they initially perceived themselves as just memorising the concepts as they were fearful of the discipline. Some examples of the active engagement of the participants were that they indicated that despite their negative preconceptions, they were determined to work harder and pay careful attention to the concepts that they had encountered as difficult. Participants who had studied accounting in their schooling careers indicated that they made reference to their high school resources and that they were determined to perceive accounting positively when participating in the threshold concepts tutorial programme. Even though all participants knew that they had to engage with the lecture content provided by their discipline experts before attempting the threshold concepts tutorial questions, many indicated that they preferred to engage with the threshold concepts tutorial questions first (Co & Chu, 2020), as they felt that learning the threshold concepts per topic allowed them to feel confident as they understood what the relevant threshold concepts were and why they were using them, before applying

themselves to the lecture content provided. Participants indicated that the requirement to reattempt the tutorial question upon completion of the analysis of the accounting and threshold concepts explanations provided, was a fruitful method that allowed them to identify and therefore correct any misunderstandings and any errors made. They also indicated that despite their fear of accounting they felt more at ease about approaching their learning of accounting after I shared my philosophy: *Work smart, not hard. Focus on the concepts,* as this allowed them to focus on the threshold concepts of the discipline and not everything.

Once the participants understood the design of the tutorial questions and the threshold concepts explanations, and therefore the deeper understanding of the threshold concepts of the discipline, they were then happy to use the threshold concepts tutorial questions as an additional or as their only newly adopted holistic approach to learning the discipline. The demystified tutorial questions have had the effect of potentially supplementing mainstream lectures and tutorials for the discipline of Accounting 101 for non-major accounting students.

12.4 Troublesome Affect

12.4.1 Learning Challenges and Emotional Responses

The findings for this phase of the learning journey, were that of *learning challenges* and *emotional responses*, two affinities generated in the Interactive Qualitative Analysis (IQA) methodology. This phase has been divided into two parts, commencing with the learning challenges and emotional responses of the participants throughout the threshold concepts tutorial programme which contained examples from the reflective learning journal entries of the participants for each threshold concepts tutorial questions found in Chapter Ten, followed by the learning challenges and emotional responses of the participants due to the COVID-19 pandemic.

12.4.1.1 Threshold Concepts Tutorial Programme for Accounting 101 (The Troublesomeness)

The Threshold Concepts Theory is a pedagogic tool that has been devised for the purposes of allowing discipline experts to identify the troublesome knowledge of a discipline, be it conceptually or emotionally troublesome in nature. This knowledge was deemed to be troublesome because of the negative preconceptions that participants possessed prior to engaging with the discipline content. As such, this pedagogic tool has provided discipline experts with the platform to create an environment conducive to teaching students this troublesome knowledge. This environment involved participants oscillating from an initial position of safety to that of the unknown as they entered the liminal phase of learning in order to acquire this troublesome knowledge (Cousin, 2006; Meyer et al., 2010; Westergaard & Wiewiura, 2015).

The conceptual trouble that participants may encounter, is that of the new discipline-specific language. The characteristic 'discursive', from the Threshold Concepts Theory, was used to describe this new discipline-specific language that may be conceptually troublesome. Researchers have therefore focused their attention on identifying the grammatical barriers in order to eliminate the troublesomeness caused by the new discipline-specific language. When designing the threshold concepts tutorial questions, this type of conceptual trouble was taken into account, and the decision to minimise the use of the new discipline-specific language when creating the detailed threshold concepts explanations was undertaken (Cousin, 2008; Foundation et al., 2013; Land et al., 2016; Meyer & Land, 2006; O'Mahony et al., 2014). Some of the participants indicated at the onset that they wanted me to be patient with them as they did not know what any of the broad terms or abbreviations relevant to the discipline were. However, upon receipt of the detailed threshold concepts explanations, with minimal discipline-specific language, participants felt more at ease as they were able to understand the explanations provided and fully grasp these threshold concepts when read in conjunction with the new discipline-specific language. This user-friendly approach allowed participants to shift their everyday understanding of the threshold concepts to the new discipline-specific understanding of the concepts, with some participants indicating that they found this shift to be easy and instantaneous (Land et al., 2005; Meyer & Land, 2005; Meyer et al., 2010).

Another form of conceptual trouble that participants may encounter, was that of the characteristic 'integration', from the Threshold Concepts Theory. This characteristic was deemed to be troublesome because once the threshold concepts are acquired, some of them may be perceived as being part of an interrelated system, and therefore perceived in a different way (Meyer & Land, 2006; Meyer et al., 2010). Participants indicated that the threshold concepts explanations explained each threshold concept in a user-friendly manner that made it easier for participants to understand exactly when and exactly how to use them as well as how they were integrated, as per the detailed step-by-step explanations provided.

When participants encountered conceptual trouble, there were two ways that they could approach this troublesome knowledge. The first approach involved participants perceiving the conceptual trouble positively, and utilising the innovative teaching environment created by the discipline experts as a transformative space in order to successfully navigate through this liminal phase of learning (Meyer & Land, 2006; Meyer, 2008). Participants were encouraged to not feel apprehensive about making mistakes, as this was a platform that they should feel confident enough to learn from. After communicating this to them, they indicated that they were then more comfortable to identify their mistakes and rectify them immediately and therefore see this as a positive learning experience. Some participants indicated that the learning challenges that they encountered made them appreciate the discipline more. As the participants gave me seven weeks to complete the threshold concepts tutorial questions, as well as the Interactive Qualitative Analysis (IQA) methodology, they experienced time management as a learning challenge from the onset, but soon overcame this once they realised that they were working at their own pace with me to assist them when needed. Participants also indicated that despite having to complete the tasks in the study in a short time frame, they felt that this tutorial programme was a stress-free environment and that there was no pressure imposed on them to know everything as they were here to learn.

The second approach involved students perceiving the conceptual trouble negatively, with them becoming stuck in their learning journey and therefore experiencing negative emotions or emotional trouble as a result of this (Land et al., 2016; Meyer et al., 2010; Westergaard & Wiewiura, 2015).

Some examples of the emotional trouble that the participants experienced were that they were scared, worried, and dreaded (Al-Maroof et al., 2020; Hossain et al., 2021; Rodríguez-Hidalgo et al., 2020) accounting to such an extent that they did not want to engage with it prior to commencing their studies. One of the participants displayed feelings of doubt, even when being right. A few participants indicated that they were apprehensive when confronted with some of the threshold concepts, but that they were determined to engage with the lecture content in order acquire as deep an understanding of the threshold concept as they possibly could. Due to the lack of understanding of some of the threshold concepts in the tutorial programme, participants indicated that they were confused and therefore not fully confident. Other participants indicated that they were confused because they failed to understand the question and requirements of the tutorial question. Some participants indicated that they did not perform well in a tutorial question (Foo et al., 2021) as they missed out a step, made many errors and realised that they needed to practise that topic a bit more. Participants also indicated that they felt uncomfortable as the topics being tested were unfamiliar to them and a bit of a learning challenge. They found that they experienced minor misunderstandings or a few learning challenges regarding the threshold concepts being tested, as well difficulty unrelated to the threshold concepts being tested, being miscalculations. One of the participants indicated towards the end of the threshold concepts tutorial programme, that even though he had learned a lot, he no longer had time available to continue with any further tutorial questions as he had a lot of other work to do at his home. Despite participants performing well, they said that they were uncomfortable as they knew that the threshold concepts in this discipline would become more challenging as the tutorial programme progressed.

The emotional capital possessed by participants will determine how they encountered this conceptually and emotionally troublesome knowledge when faced with it. The Psychological Capital (PsyCap) factors are used to explain why some participants can either successfully navigate through the liminal phase of learning or who remain stuck as they failed to understand the threshold concepts of the discipline (Karunaratne et al., 2016; Land et al., 2016; Meyer & Land, 2006). These findings are elaborated on in section 12.5 of this chapter.

The purpose of this sub-section was to analyse the negative perspective of the learning challenges and emotional responses of the participants. Participants were found to be very critical (Azevedo & Sugahara, 2012; Fisher & Murphy, 2006; Gronow & Morrison, 2017; Meyer & Land, 2006; Partin & Haney, 2012), when reflecting upon their learning challenges

and emotional responses of the discipline from the commencement of the programme. However, overall, the participants indicated that their initial negative preconceptions of the discipline were actually false and that upon completion of the programme, their experience of Accounting 101 was not as bad as they had initially imagined it to be.

12.4.1.2 COVID-19 Pandemic (The Troublesomeness)

The lockdown that South Africa was subjected to in March 2020 included the suspension of teaching and learning at university sites. As such the generation and collection methods of the data had to be reassessed in order to proceed with the study. This meant that the study was redesigned with the use of online platforms in order to interact with the data sources. The context of COVID-19 was utilised as an opportunity during the uncertain time that the country faced. The online platforms that this study used were designed in an innovative way in order to facilitate the teaching and learning of troublesome knowledge with the absence of the traditional face-to-face environment to which both students and discipline experts have been long accustomed to (de la Harpe & Mason, 2014; Westergaard & Wiewiura, 2015).

Upon creating the WhatsApp Messenger group and sending the introductory documentation, the participants were asked if they had the necessary resources to communicate on this online platform, primarily that of data and a mobile device or laptop. The utilisation of other online platforms, like Zoom, Loom or Skype, for example, to conduct the tutorial sessions and IQA methodology, were also posed as a suggestion to the participants. All participants indicated that they had cellular telephone data or Wi-Fi data, but the vast majority were not prepared to use online platforms other than WhatsApp Messenger due to high data consumption. This implied that the newly-designed study using an assortment of online platforms was subject to change depending on the resources of the participants.

Data, Signal, Devices, Study Environment

During the Interactive Qualitative Analysis (IQA) interview, the participants were asked about their experiences with their data, their signal from their respective service providers, their devices used, their study environment and the time they studied. Of the sixteen participants interviewed, all had either cellular telephone data or Wi-Fi data. However, one participant indicated that her data was consumed quickly and was expensive to purchase; another indicated

that she did not have access to enough data; and a third participant indicated that even though he had monthly data, that when it expired, it posed a problem. Of the sixteen participants interviewed, three indicated that the signal from their respective service providers was either bad, poor, or temperamental, but that they tried their best in spite of this online learning challenge. A few participants indicated that they shared their laptop device with their siblings who lived in the same household as them, while a few participants used their cellular telephones as they did not have a laptop or iPad and preferred using their cellular telephones. Of the sixteen participants interviewed, all indicated that they had an environment, free of distractions, and families who accommodated their studying. Of the sixteen participants interviewed, three participants indicated that they preferred to study early in the morning, on average from 7am to 3pm. The remaining thirteen participants indicated that they preferred to study late at night, on average from 3pm to 7am. I therefore indicated that I would be available 24 hours a day for the seven-week duration of the data collection period as each participant had their own schedule that I was happy to accommodate. This enquiry, regarding the participants' experience with their resources, was imperative as it provided insight regarding the additional technological and logistical challenges that the participants faced at the commencement of the COVID-19 pandemic.

Data Collection During The COVID-19 Pandemic: The Introduction and The Threshold Concepts Tutorial Programme

As the participants indicated that they were only willing to utilise one online platform, being WhatsApp Messenger, the collection of the data was limited to only this platform. The participants returned the introductory semi-structured interview schedules, Informed Consent and tutorial submissions via the WhatsApp Messenger individual chat feature. They used the following methods to send their responses: Adobe Acrobat, Windows Photo Viewer with either a typed or handwritten image, a Word Document, a WhatsApp message. For the document that required a signature, a few students used Windows Photo Viewer with either a digital or handwritten image, and one student attached her signature as an image to a Word Document. These methods employed by the participants allowed for the tutorial sessions to be conducted and for data to be collected, as per an instant messaging system, that of the WhatsApp Messenger individual chat feature, in a newly-designed online platform.

Data Collection During The COVID-19 Pandemic: The IQA Focus Group Session

The first phase of the Interactive Qualitative Analysis (IQA) methodology required a focus group session to be conducted. The WhatsApp Messenger group chat feature was utilised in this study to conduct the focus group session. Despite the challenges of a lack of a video function and limited degree of control that was experienced in this study (Hinkes, 2020), the fact that most of the participants did not know each other from the large classroom environment prior to the lockdown, allowed them to use this anonymity and the absence of a video function to their advantage. This yielded in most participants actively engaging with rich responses and sometimes questions to the questions asked, as they did not have the fear of being intimidated by the more interactive participants, an experience they would have encountered if they were in a face-to face-forum (Tates et al., 2009). This method allowed for the focus group session to be conducted and for data to be collected, as per the instant messaging system, the WhatsApp Messenger group chat feature, in the newly-designed online platform.

Data Collection During The COVID-19 Pandemic: The IQA Semi-Structured Interviews

The second phase of the Interactive Qualitative Analysis (IQA) methodology required semi-structured interviews to be conducted with each participant. The WhatsApp Messenger calling feature was used in this study to conduct the semi-structured interviews. Despite the challenges of a lack of the traditional face-to-face environment, that would allow the interviewer to use personal interaction and visual cues (Creswell & Creswell, 2017; Holbrook et al., 2003; Szolnoki & Hoffmann, 2013), or the discomfort some participants experienced when divulging sensitive information over the telephone that is reported in prior studies (Groves, 1979), I remained optimistic about the participants being more relaxed when divulging sensitive information in this platform (Novick, 2008). A rapport had already been established with the less than twenty participants, and this provided level of assurance in the absence of visual cues. As this study was conducted during a pandemic, the utilisation of a telephonic interview ensured the safety of the participants as this platform eliminated the need for face-to-face interaction (Carr & Worth, 2001). The video function provided by online platforms, like Skype, for example, that would have allowed for visual cues (Janghorban et al., 2014), was not cost-effective to the participants as they had cellular telephone and Wi-Fi data constraints. Most of the participants opted to use their night time data, so some of the interviews were conducted in the evening, with one participant who requested an interview to be scheduled at midnight. This method employed allowed the semi-structured interviews to be conducted with each participant and for data to be collected effectively, as per an instant messaging system, being that of the

WhatsApp Messenger calling feature, in a newly designed online learning platform.

How the Lockdown Affected Them Emotionally

The participants had equal responses to the range of all possible responses as to how the lockdown affected them; no effect, negatively and positively. This enquiry, regarding how the lockdown affected the participants emotionally, was imperative as it provided insight regarding the various affective positions of the participants to learning in a threshold concepts tutorial programme during the COVID-19 pandemic.

12.5 Liminality and Progression to Mastery: The Affective Journey

12.5.1 Learning Experiences and Various Learning Outcomes (Liminality and Progression to Mastery)

The findings for this sub-section of the learning journey, were that of *learning experiences* and *various learning outcomes*, two affinities generated in the Interactive Qualitative Analysis (IQA) methodology.

Threshold concepts have the effect of being troublesome to students from a conceptual as well as an emotional or affective point of view. Participants will experience the oscillation between the safety of the familiar space, and the discomfort of the unfamiliar new space. Those who find themselves stuck in the pre-liminal space will not be as susceptible to oscillate in the next phase, being the liminal space. This body of literature focused on creating a safe space or supportive 'holding environment for participants to navigate through at the point of them encountering troublesome knowledge or when they became stuck, i.e. during the liminal phase of learning, as this troublesome knowledge was also transformative in nature (Cronin, 2012; Harlow et al., 2014; Hedges, 2014; Land et al., 2016; Meyer & Land, 2003, 2006; Meyer et al., 2010; Turner, 1969; Vygotsky, 1978).

Discipline experts are responsible for creating these safe spaces or supportive liminal spaces with innovative means in order to assist students to overcome both the conceptual and the affective trouble encountered within a discipline, as they acquire the jewels of a discipline, the threshold concepts (Meyer & Land, 2006; Meyer et al., 2010). This safe space allowed participants to reflect upon their position in their learning journey, or their learner identity. Identity is a key Threshold Concepts Theory aspect that allowed discipline experts to focus on the affective component of learning, and more specifically, of learning in a Threshold Concepts Theory environment (Cousin, 2008; McGuigan & Weil, 2010; Meyer & Land, 2006; Meyer, 2008).

Some examples of the reflections of the participants of their learning journey within the safe space are that once they engaged with the threshold concepts tutorial explanations provided, they realised that only the important information was provided, being the jewels, or threshold concepts of the discipline, making it easier for them to understand what they had learned from the textbook. Some participants indicated that even though it was a challenge to self-study before attempting the tutorial questions, they did however persevere when faced with this challenge as they learned how to make the relevant connections to the concepts being tested. Participants who did not self-study initially, indicated that they grasped some of the concepts from the programme, which equipped them with some knowledge before engaging with the lecture content, while others indicated that they used the programme as their only learning source for some topics. Others participants indicated that they found the threshold concepts environment to be interesting and more useful than the actual lecture content provided. Participants who experienced difficulty at the onset indicated that after utilising the threshold concepts explanations, their understanding had either improved immensely or their understanding of the topic was made easier and they were able to complete the tutorials with ease. Those who had studied accounting in their schooling careers, indicated that they experienced minimal learning challenges as they understood most of the work before engaging with the threshold concepts tutorial explanations, but that the explanations helped to solidify the concepts being tested.

Participants were also reassured about the safe space that they will be supported in by discipline experts during this troublesome liminal phase. This safe space was conducive to allowing them to slowly develop their understanding (Cousin, 2008; Meyer & Land, 2006; Meyer, 2008). Some examples of the slow development of participant understanding are that some of the

participants indicated that even though they experienced time management as a learning challenge at the onset, they quickly overcame this learning challenge once they realised that they were working at their own pace with me to assist them when needed. One of the participants indicated that she enjoyed self-studying and being able to ask for assistance.

If discipline experts created a safe and supportive enough space, then the discipline content should be understood by all participants and they should feel confident enough to acquire a transformed way of thinking as per the definition of the Threshold Concepts Theory as well as be comfortable with the knowledge acquired. The advantages of successfully navigating their way through the liminal phase of learning was also communicated to participants to entice them to voluntarily enter this phase of their learning journey (Allen, 2014; Fortune et al., 2012; Land et al., 2016; O'Mahony et al., 2014; O'Donnell, 2010).

Some examples of the advantages the participants acquired were that participants indicated that not only were they surprised that they actually learned during the pandemic, but that they also found the tutorials to be informative and understandable and a means to adopt as their learning approach. Participants also indicated that they had found a new way of learning by having a firm understanding of the threshold concepts of the discipline in the form of the feedback and explanations provided in the tutorial programme. In addition to learning the outcomes of each topic in the Accounting 101 discipline content, they indicated that they were viewing the discipline differently and that they were astonished that they could grasp concepts that they could not understand prior to this programme. Participants indicated that they were proud of the fact that they could engage in a conversation about Accounting 101 with their peers who had studied Accounting 101, as well as with those who did not, as they were confident about the knowledge they acquired and that they were ready to apply this to their daily lives. They felt that participating in the programme was an eye-opening experience that enabled them to apply these threshold concepts to their studies and therefore made them think like accountants, which was the purpose of the threshold concepts tutorial questions designed. Participants indicated that even though they felt nervous at the commencement, their confidence and work ethic improved over the duration of the programme. Participants indicated that they found the programme rewarding and that they performed well, which in turn resulted in them excelling when engaging with the lecture content as well. Overall, participants perceived their learning experiences as a result of the programme, to be unique and helpful. They perceived the programme to be a platform that they felt comfortable enough in to identify their mistakes and

acquire all their learning outcomes from, based on the detailed threshold concepts explanations provided.

12.5.2 Emotional Responses

The findings for this sub-section, were that of *emotional responses*, an affinity generated in the Interactive Qualitative Analysis (IQA) methodology.

How They Were Motivated to Learn During the Lockdown

During the Interactive Qualitative Analysis (IQA) interview, participants were asked about how the lockdown affected them emotionally, in order to determine how they were motivated to learn during the lockdown. One of the participants indicated that the lockdown motivated him to get out of bed to learn. A few participants indicated that as the tutorial programme was the only activity they had prior to the commencement of their online learning programme, they felt that it was an activity that allowed them to sustain their interest in the interim. Others were fearful of not completing their work or failing. Other participants were simply self-motivated to complete the tutorial programme activities.

One of the participants had her family as her support system and her past experiences to reflect upon in order to motivate her to keep up to date with the tutorial programme. Some participants used the cohort of their peers participating in the tutorial programme as the reason to either keep up to date or ahead of the group as best they could.

Once participants realised that the Threshold Concepts Theory could be used to allow them to progress throughout their learning journey and therefore the discipline, they were more inclined to utilise the tutorial programme to their benefit. The participants' level of comfort was increased when attempting the tutorial questions, as they were based on their prescribed textbook, a textbook used for their mainstream studies.

Participants indicated because of the step-by-step guidance and regular communication from me on the WhatsApp Messenger group chat and the WhatsApp Messenger individual chats, they were more focused when attempting the tutorial questions as they were comfortable to communicate when they needed assistance.

Participants also realised that their time was used to fully focus their attention on this discipline, and that this investment of their time allowed them to improve their knowledge of Accounting 101 and in turn allowed them to feel more confident to study and stay up-to-date.

This enquiry, regarding how the participants were motivated to learn, was imperative as it provided insight regarding how the participants learned in a threshold concepts tutorial programme during the COVID-19 pandemic. Participants were found to use fear, family, my step-by-step guidance and regular communication on WhatsApp Messenger that allowed them to feel more comfortable, and therefore motivated to learn during the programme.

12.5.3 Learning Attributes (The Affective Journey)

The finding for this sub-section, were that of *learning attributes*, an affinity generated in the Interactive Qualitative Analysis (IQA) methodology.

Deep Learning

What made learning effective was the intentional choice of a participant to learn, therefore making it that of deep learning. The improvement of learning, be it of a superficial or deep nature, is determined by a participant's motivation. Motivation resulted in participants having the self-esteem to learn independently, in a student-driven learning environment. Discipline experts can also deepen learning by developing appropriate assessment methods that are focused on examining the improved learning outcomes. The learning outcomes of a discipline were reclassified as per the Threshold Concepts Theory and this improved quality of the learning outcomes, or threshold concepts of the discipline, will ensure deep learning (Biggs, 1999; Burch et al., 2015; Decker, 2006; Khan, 2014; Meyer, 2008; Shanahan et al., 2016).

Self-Efficacy Theory of Motivation

A student's motivation and achievement can be predicted or explained using self-constructs, with the focus of the study being on that of 'self-efficacy'. One of the four factors of the construct of Psychological Capital (PsyCap) was that of 'efficacy', which looked at the emotional capital a participant possessed, and not intellect, in order to pass through the liminal phase of their study of Accounting 101 (Bandura, 2010; Bandura & Walters, 1977; Bong & Clark, 1999; Bong & Skaalvik, 2003; Meyer & Land, 2006). The PsyCap factors are that of 'hope', 'efficacy', 'optimism' and 'resilience'. Due to the dearth of research studies conducted using PsyCap in an academic environment, the Myers-Briggs Type Indicator was used in this study as an extension of the PsyCap research (Chang, 1998; Land et al., 2016; Luthans, 2002; Luthans, Youssef, et al., 2007; Masten, 2001; Masten & Reed, 2002; Pajares, 2005; Scheier & Carver, 1985; Schunk, 1991; Shogren et al., 2006; Zimmerman, 2002).

Myers-Briggs Type Indicator

Despite the popularity of the Myers-Briggs Type Indicator, researchers have also identified limitations inherent with the use of the instrument and have also further indicated that it should not be utilised for career planning, therefore making the Myers-Briggs Type Indicator popular for uses unrelated to its validity and reliability. Therefore, this study used both the Myers-Briggs Type Indicator and the Eysenck's Personality Theory as these two personality instruments allowed for the personality traits of the participants to be recorded accurately. The two dimensions identified by Eysenck were utilised for the study's personality traits figure. The first dimension allowed the study to determine if a participant was an extravert or introvert, whilst the second dimension allowed the study to determine where in the liminal journey a participant was, as well as their perceptions (Bencsik et al., 2016; Boyle, 1995; Carlyn, 1977; Harrington & Loffredo, 2010; Lucas & Mladenovic, 2007; McCaulley & Martin, 1995; Pittenger, 1993b; Sample, 2017).

The additional layer that the study contributed to the Eysenck's Personality Theory were the MBTI codes and any change thereof as a result of how participants learned Accounting 101 in a threshold concepts environment in a newly-designed online platform, during the COVID-19 pandemic. The study used this additional layer to clearly outline how the first system, the Interactive Qualitative Analysis (IQA) methodology, compared to the second system, the Myers-Briggs Type Indicator, and therefore answered the third question when conducting the Interactive Qualitative Analysis (IQA) process.

Some examples of the learning attributes acquired are that most of the participants indicated that they either became confident or more confident than they originally were upon the completion of the tutorial programme. This confidence was also attributed to the new and improved learning style they had adopted from the demystified tutorial design which allowed them to stop doubting their abilities and therefore became mentally stronger when encountering learning challenges. Participants also learned to be patient when encountering learning challenges, as some concepts took longer to understand than others, and they knew that they would fully understand them if they persevered. They indicated that they became confident enough to offer their opinions as opposed to confusing themselves and overthinking. Participants adopted a more positive attitude as they had a better understanding of the discipline content and were therefore motivated to work harder and to be more focused, by paying close attention to the details of the discipline content. Not only had they had developed the ability to learn new concepts presented to them, but they also found that they could easily spot these new concepts and could answer tutorial questions much faster than before with a higher level of detail provided. They were able to self-study and manage their time appropriately and therefore sacrifice their leisure time. Participants indicated that they learned to be more adaptable to this newly-designed environment and became more comfortable when using the online platforms available to them. Overall, participants became savvy enough to realise that the quality of the threshold concepts, is better than the quantity of the entire body of knowledge in order to master the discipline of accounting. They also felt like their minds were now programmed to think about the threshold concepts characteristics that a threshold concept possessed when they encountered a new concept.

When the Myers Briggs Type Indicator semi-structured interviews conducted prior to and upon completion of the threshold concepts tutorial programme were compared, it was found that each participant, except for one, had undergone a change in their MBTI personality code, with some participants moving within quadrants and some even moving to different quadrants as per the Eysenck Personality Theory. Upon the completion of their university's online learning programme for the first semester, the assessment results of each participant for the discipline of Accounting 101 were obtained. In a face-to-face environment, participants would have written mainstream assessments while they were participating in the threshold concepts tutorial programme. They instead had the advantage of focusing solely on Accounting 101 for seven weeks prior to the commencement of their online learning programme. It was found that the participants had performed well and were pleased with their results when sharing them with

me. This study attributed these results to the deep understanding and the improved psychological capital of the participants (Carlyn, 1977; Davidson et al., 2012; Luthans, Avolio, et al., 2007), as they were motivated to participate in a newly-designed online platform during the COVID-19 pandemic.

12.5.4 Perceptions (Post-Liminality)

The findings for this sub-section, were that of *perceptions*, an affinity generated in the Interactive Qualitative Analysis (IQA) methodology. I have divided this sub-section into two parts, commencing with thinking like an accountant in the post-liminal phase, followed by the threshold concepts tutorial programme for Accounting 101 in the post-liminal phase, which contained examples from the IQA interview questions asked upon the completion of the programme.

12.5.4.1 Thinking Like an Accountant (Post-Liminality)

The definition of a threshold concept implied that the journey to understanding discipline content was troublesome and that the transformed understanding that participants possessed thereafter was an indicator of how they thought. This transformed understanding implied that the participant possessed a privileged understanding of the discipline and ultimately thought like an accountant. Discipline experts have identified that they needed to implement innovative teaching methods in order to make explicit the everyday problems and the everyday solutions, and therefore bridge the gap between university and industry by shifting the worldview of the participants. This shift also allowed the discipline to slowly move towards being viewed in a positive light (Brunetti et al., 2014; Fisher & Murphy, 2006; Gronow & Morrison, 2017; Land et al., 2016; McGuigan & Kern, 2010; Meyer & Land, 2006; Meyer, 2008; Mladenovic, 2000).

Some examples of how the participants thought like accountants were that they indicated that they felt accounting was actually not hard, but that it just required them to apply themselves in a specific way in order to gain a full understanding. They indicated that the scenarios in the tutorial questions were designed in a such a way that made it easier for them to gain this full understanding. Participants felt that not only had they grasped the learning the outcomes of each topic in the Accounting 101 discipline content, but that they were viewing the discipline

differently. They were astonished that they could grasp concepts that they could not understand prior to this programme and that they had now understood why the concepts were important and the role it played in their everyday lives. They indicated that they were proud that they could engage in a conversation about Accounting 101 with their peers who had studied it, as well as with those who did not, as they appeared to be confident about the knowledge they acquired and were ready to apply this to their daily lives. Some felt that this was an eye-opening experience that enabled them to apply these threshold concepts to their studies and made them think like accountants.

All Participants Specifically Outlined What They Perceived Accounting 101 to be After They Had Completed Studying a Semester's Worth of Discipline Content

During the Interactive Qualitative Analysis (IQA) interview, participants were asked about what they perceived Accounting 101 to be after they had completed studying a semester's worth of discipline content. Participants indicated that they could use the various accounting learning outcomes in their job or their business as well as to manage their personal accounts. Participants indicated that this understanding would allow them to become independent and innovative.

Some participants who had already studied accounting in their schooling careers indicated that this experience allowed them to revise the fundamental concepts learned, as well as provided them with the confidence to approach new accounting threshold concepts. This experience also allowed participants to make choices regarding their major disciplines in the future.

Participants were found to experience a shift in attitude as they found the threshold concepts tutorial programme the appropriate platform for this transformation. This enquiry, regarding what the participants perceived Accounting 101 to be in relation to their chosen programme, after they had completed studying a semester's worth of discipline content, was imperative as it provided insight regarding their shift in attitude towards Accounting 101 during the threshold concepts tutorial programme and how they came to think like accountants.

12.5.4.2 Threshold Concepts Tutorial Programme for Accounting 101 (Post-Liminality)

Some examples of the perceptions of the threshold concepts tutorial programme were that participants indicated that their perceptions had changed drastically from the commencement to the completion of the tutorial programme. Only one participant had indicated that he could not understand why he could not grasp the concepts, while the rest of the participants explained the transformation had experienced. Participants indicated that they no longer saw themselves as a below average student in their Accounting 101 class, as the knowledge base that they acquired provided them with a sense of hope. They were adamant about obtaining the best marks that they could in this discipline so as to avoid writing any supplementary assessments. Some participants hoped to obtain 60% for Accounting 101 prior to the commencement of the programme, and upon completion of the programme, they were confident that they would obtain an A aggregate as they felt that the threshold concepts programme was effective. Participants who felt they could learn the threshold concepts without lectures, indicated that they found the tutorial programme to be more beneficial than the lecture content, and therefore felt more confident when approaching the discipline content. The rest of the participants explained the transformation of their understanding. They indicated that they were all growing as individuals as they interacted with the discipline content. Participants were also committed to spending time working hard with the discipline content, which resulted in them also performing well in the tutorial questions. Participants were amazed that they could understand concepts that they never expected to as they were more informed by the threshold concepts explanations and how to respond to tutorial questions based on the step-by-step format laid out in the demystified threshold concepts explanations.

Participants also indicated that they felt like completely different people upon the completion of the tutorial programme. One of the participants indicated that she had grown mentally over of the duration of the programme as this platform allowed her to not experience the usual high levels of stress that she was accustomed to, but to rather experience learning accounting in a threshold concepts environment. Despite participants possessing a negative preconception of the discipline and the threshold concepts programme prior to engaging with the study, they indicated that they decided to try their hardest to apply their minds to the programme, even though they thought that the programme may not have been as effective as they envisioned it to be and that they may not cope with the tasks assigned to them and therefore not do well.

This, however, resulted in them not only improving, but performing quite well, as they engaged with the tutorial programme. This engagement further allowed them to grasp the threshold concepts faster than originally anticipated. Participants indicated that the tutorial programme was the platform that changed their negative preconceptions into that of a positive one which allowed them to feel more confident as the discipline content actually made sense to them. Other participants admitted that instead of their original plan to dedicate their time to watching Netflix while waiting for the online learning platform to commence on 1 June 2020, they found themselves being dedicated to working hard while learning the threshold concepts and were confident about the progress.

Other participants were quite succinct about their perceptions of themselves over the programme, using the words "crushed it" and "accomplishment" to aptly describe their perceptions. Other participants found engaging with the threshold concepts programme from the commencement to be easy as they could resonate with the demystified design of the tutorial questions immediately and therefore became more confident when understanding the discipline concepts. Participants indicated that the threshold concepts tutorial programme was effective and that if implemented to all students, that they would also improve. They felt that the one-on-one assistance provided by me to each participant enabled them to give a "stellar performance" throughout the programme and they were confident that they would continue to perform this way going forward. Another participant indicated that she had grown and could see how one of the topics related to the degree that she was studying towards and that she amazed herself time and time again over the duration of the threshold concepts tutorial programme. Others felt the threshold concepts group to be amazing and that their experiences in the tutorial programme were definitely worthwhile. Participants indicated that they had a great learning experience as they enjoyed knowing how to apply the threshold concepts from the tutorial questions. They felt that learning the threshold concepts of Accounting 101 was exactly what they had required in their learning journey and that this was the easiest learning experience that they had encountered. They indicated that they became more curious about the discipline and what more it had to offer as they felt like their minds were now programmed to think about the threshold concepts characteristics that a threshold concept possessed when they encountered a new concept.

Perceptions Upon Completion of the Threshold Concepts Tutorial Programme

During the Interactive Qualitative Analysis (IQA) interview, participants were asked about their perceptions upon the completion of the threshold concepts tutorial programme. All participants perceived the tutorial programme to be productive as they too were productive: it allowed them to study many topics in the discipline and therefore learn many new threshold concepts. A few participants indicated that they preferred the conventional face-to-face learning environment, whilst the majority indicated that they were able to study more in the tutorial programme than they did in the face-to-face environment prior to the commencement of the tutorial programme.

Those participants who were initially apprehensive or introverted, indicated that they had become confident upon completion of the tutorial programme.

Some participants indicated that the online tutorial programme allowed them the opportunity to read the messages in the WhatsApp Messenger chats as many times as they needed to, as opposed to a face-to-face consultation, where they could easily forget the explanations provided. Participants also indicated that they were happy about being able to study at their own pace and as such they were able to identify the threshold concepts being tested in their own time. They also indicated that threshold concepts would serve well to be incorporated into mainstream lectures and tutorials.

Advantages and Disadvantages of the Tutorial Programme

Participants indicated that some of the advantages of the tutorial programme were that it was used as their motivation to study in the available time during the lockdown period. The advantage of sufficient available time allowed participants to firstly engage with the discipline content and to then attempt the tutorial questions. This sufficient available time allowed participants the flexibility to study at their own pace, and at any time that was suitable for them, in the comfort of their own homes, without being held to a strict timetable.

The participants who did not study accounting in their schooling careers found the available time to be more advantageous than those who did study accounting prior to the tutorial programme as they were able to conduct more in-depth research prior to attempting the tutorial questions. Participants who did, however, study accounting in their schooling careers, indicated that the tutorial programme was used to refresh their existing knowledge of accounting. All participants felt that being able to ask me questions whenever they needed to, was a big advantage of the tutorial programme as this offer allowed them to almost immediately resolve their queries without having to wait for an allocated consultation period and without fear of being left behind or being slowed down by the other participants.

The obvious primary disadvantage that participants experienced was the absence of the face-to-face environment and the interacting with other students. Other disadvantages were that there were instances where participants did not have access to signal from their respective service provider or money to purchase data. One of the participants who had not studied accounting in their schooling career indicated that he had limited time available as his research conducted prior to attempting the tutorials was time-consuming. Another participant indicated that she preferred the structure a timetable offered her, but still utilised the available time to study at her convenience. A few participants also indicated that they did not encounter any disadvantages with the threshold concepts tutorial programme. This enquiry, regarding the participants' perceptions upon completion of the threshold concepts tutorial programme provided insight regarding the perceptions of the productivity of the threshold concepts tutorial programme. It was found that apart from the disadvantages explained, the participants indicated that they experienced more advantages when participating in the programme.

12.5.4.3 Interdisciplinarity

The Threshold Concepts Theory has investigated the interdisciplinarity aspect amongst fields of study in order to provide a degree of comparability in an otherwise incomparable interdisciplinarity environment (Land et al., 2016). As the participants hailed from four different programmes, the only comparability this study could identify was that the discipline of Accounting 101 was present in each of these programmes. Therefore, instead of conducting the research amongst many disciplines within one programme, i.e. interdisciplinarity, this study instead conducted research amongst many programmes that housed the discipline of

Accounting 101. Based on these programmes, this study has created the word 'interprogramminarity' to describe the participant's overall common positive perception regarding the relevance of Accounting 101, which ultimately provided the study with a degree of comparability in an otherwise incomparable 'interprogramminarity' environment. It has therefore been found that the Threshold Concepts Theory can now be utilised to investigate the 'interprogramminarity' of one discipline housed in many programmes.

12.6 Conclusion

In this chapter, the affinities generated in Phase One of the Interactive Qualitative Analysis (IQA) methodology were used as sub-sections to discuss my findings in detail relevant to the literature reviewed. This chapter also indicated the new findings of the study that ultimately added to the body of knowledge being utilised. The next chapter discusses the conclusions of the study.

CHAPTER THIRTEEN
CONCLUSION

13.1 Introduction

In the previous chapter, a discussion of the twelve key findings of the study regarding the experiences of how non-major accounting students learned Accounting 101 in a threshold concepts tutorial programme was presented. These findings were discussed in relation to the literature review themes and the affinities generated during the Interactive Qualitative Analysis (IQA) methodology. This chapter signals the conclusion of the study, by providing a brief overview of the study, with the limitations experienced, and suggestions for further research. A framework for non-major accounting students' learning of Accounting 101 in a threshold concepts tutorial programme is provided, followed by concluding comments.

13.2 Overview of the Study

13.2.1 Background, Rationale and Critical Questions

In Chapter One, the study was introduced by describing Accounting 101 classrooms at SAICA accredited universities in South Africa. These classrooms are typically characterised by large class numbers comprising of both major and non-major accounting students. The students who are majoring in the discipline of accounting, have elected to study accounting and qualify as chartered accountants or in similar fields. Those who are not majoring in the discipline of accounting, have had accounting imposed upon them as a compulsory discipline in their chosen programmes. These non-major students are either learning Accounting 101 for the first time, or have studied accounting in their schooling careers. Historically the pass rates and class averages in these classes are low both internationally (Hove et al., 2010; McGee et al., 2004) and in South Africa (Du Plessis et al., 2005).

As the discipline experts who have taught the discipline of Accounting 101 hail from the Bachelor of Commerce in Accounting programme, they have designed the pedagogy, curriculum, assessment style and the delivery thereof, with the competencies required by SAICA with the purpose of becoming a chartered accountant. The challenge inherent in this

this classroom was that discipline experts had limited resources and were therefore unable to provide an additional and equal focus, in order to accommodate a design applicable to non-major accounting students who do not want to become chartered accountants, or for those students who have an aversion to the discipline. This challenge necessitated a deeper understanding of non-major accounting students' learning of the discipline of Accounting 101, including those who possessed an aversion towards accounting, both of which may have contributed to the failure rate. In an attempt to deepen this understanding, a tutorial programme based on the Threshold Concepts Theory was designed. The study addressed the following research questions:

- How do non-major accounting students learn Accounting 101 in a tutorial programme based on the Threshold Concepts Theory?
- Why does learning happen in this way?

13.2.2 Theoretical Framework

In Chapter Two, the theoretical framework, the Threshold Concepts Theory was introduced and explained. The term 'threshold concepts' originated from two economists, Erik Meyer and Ray Land in 2003, from a United Kingdom research project (Enhancing Teaching-Learning Environments in Undergraduate Courses). This project looked at strengthening the classroom environment, specifically the teaching and learning dynamic. Meyer and Land held that specific concepts in the Economics discipline were "central to the mastery" of their discipline. They coined these specific 'threshold' specific concepts as they had "certain features in common" (Cousin, 2006). The idea of a 'threshold concept' within discussions regarding learning outcomes provided a basis for identifying learning outcomes that allowed us to see things in a new way or not (Meyer & Land, 2003). Five key features or characteristics of a threshold concept were identified by Meyer and Land and two new characteristics were subsequently added. The first five characteristics were 'transformative', 'irreversible', 'integrative', 'bounded', and 'troublesome knowledge' (Meyer & Land, 2003). The two new characteristics that were subsequently added were 'constitutive' and 'discursive' (Land et al., 2016).

The Threshold Concepts Theory carried two titles (Meyer et al., 2010). The first title was 'TC', which was seen to be an 'analytic educational framework' that comprised of the seven characteristics just listed. The second title was 'tc', which implied that the conceptual framework for any discipline comprised of learning outcomes of a discipline that possessed the seven characteristics of the Threshold Concept Theory. The theory used was the original theory constructed by Meyer and Land (2003), in conjunction with a theory constructed by Timmermans and Meyer (2016), that sought to create and embed integrated threshold concept knowledge in the practices of university discipline experts. The second theory's concepts related to 'effective teaching', 'transformative learning' and 'emotion and motivation'.

The word used to describe the threshold concept learning journey was 'liminality'. The Threshold Concepts Theory used the term liminality to describe the place in which a participant learned how to master a threshold concept (Meyer & Land, 2006). This study has likened liminality to the fairy tale *Alice in Wonderland* and Alice falling down the rabbit hole. This liminal phase involved participants encountering troublesome knowledge, being one of the characteristics of the Threshold Concepts Theory. The knowledge could be troublesome conceptually, as well as emotionally for participants (Land et al., 2016), which were elaborated on in Chapter Three.

There has been limited research conducted internationally in the field of the Threshold Concepts Theory for the discipline of Accounting 101. These studies have implemented a variety of methodologies and methods. The application of the Threshold Concepts Theory to teach Accounting 101 has not gained traction in South Africa to date. As a result, there has been limited scholarship in this area. The purpose of the study was to understand, as per the paradigm chosen, that of interpretivism, how non-major accounting students learned Accounting 101 in a tutorial programme designed using the Threshold Concepts Theory, with the chosen methodology of Interactive Qualitative Analysis (IQA). The significance of the study is to improve the teaching and learning component, as well as to redesign the curriculum of the discipline in accordance with the threshold concepts implemented. As the study has utilised the original Threshold Concepts Theory posed by Meyer and Land in conjunction with a later Threshold Concepts Theory by Timmermans and Meyer, that suggested the notion of integrated threshold concept knowledge, this is where I hoped the current study may contribute towards the advancement of the existing body of knowledge.

13.2.3 Literature Review

In Chapter Three, four literature review themes were introduced relevant to the threshold concepts learning journey, the liminal phases of learning.

The first literature review theme described the preconceptions of non-major accounting students in the pre-liminal phase of their learning journey. “Boring”, “different” and “unethical” (Fisher & Murphy, 2006, p. 48) were some of the words used to describe accounting over the years. These preconceptions that non-major accounting students entered the classroom with were based on, for example, television, movies, the global events that have occurred over time from popular culture (Miley, 2005). These stories and odd historical events were not a true reflection of the profession and as such non-major accounting students should be educated about the benefits of the profession when used correctly. This attitude shift was imperative because participant perceptions influenced the approach to learning a participant adopted, be it deep or superficial in nature, as well as having the effect of influencing the career path and the corresponding major disciplines the participant chose to follow (Mladenovic, 2000).

The second literature review theme described how participants learned as a result of the effective teaching conducted by discipline experts using the Threshold Concepts Theory. The reason the Threshold Concepts Theory was appealing is that it was one of the options made available to the schools of teaching and learning that provided discipline experts with a platform to explicitly define the discipline-specific ways of thinking and discipline-specific ways of practising (Barradell, 2013; Meyer & Land, 2006). The Threshold Concepts Theory allowed for the determination of which learning outcomes of the discipline content of Accounting 101 represented ‘seeing things in a new way’. A threshold concept was likened to that of a portal that opened up a new way of thinking, that transformed the understanding of participants, allowing them to progress to the mastery of the discipline (Cousin, 2010; Land et al., 2005; Meyer & Land, 2003, 2006; O'Mahony et al., 2014).

The third literature review theme described the acquisition of threshold concepts as troublesome, both cognitively and affectively. The presence of heightened emotions, regarding the manner in which learning took place, minimised the amount of learning that actually occurred (Westergaard & Wiewiura, 2015). Throughout the study of the Threshold Concepts

Theory, reference to the emotional journey has been made. The five types of troublesome knowledge would more than likely evoke the feelings that came with any sort of trouble. Participants described their encounter with the troublesome knowledge with the use of emotional language, a language that did not fit into any of the five types of troublesome knowledge described. Even though discipline content was neutral from an emotional perspective, the approach participants had when interacting with discipline content was highly emotional. As such it made sense that the emotional response to the five types of troublesome knowledge has been formally identified as another type of troublesome knowledge, 'troublesome affect'. There was an emphasis placed on the participant learning and the emotion attached to the participant learning, as discipline experts have identified this emotional element as a bottleneck in a participant's learning journey (Land et al., 2016). This study has investigated the emotional aspect of non-major accounting students from the commencement to the completion of the programme.

The fourth literature review theme described the hope of researchers to create supportive and safe liminal spaces in which discipline experts could formulate ways to assist participants to overcome both the conceptual as well as the emotional barriers to learning (Meyer & Land, 2006). The way this study formulated to assist participants to overcome these barriers to learning was with the implementation of a tutorial programme based on the Threshold Concepts Theory. The third concept of the theory by Timmermans and Meyer in 2016 related to 'emotion and motivation'. What made learning effective, was the intentional choice of a participant to learn. The improvement of learning, be it of a superficial or deep nature, was determined by the participants' motivation. Motivation resulted in participants having the self-esteem to learn independently, in a student-driven learning environment. Discipline experts can also deepen learning by developing appropriate assessment methods that are focused on examining the improved learning outcomes. The learning outcomes of a discipline were reclassified as per the Threshold Concepts Theory and this improved quality of the learning outcomes, or threshold concepts of the discipline, ensured deep learning (Biggs, 1999; Burch et al., 2015; Decker, 2006; Khan, 2014; Meyer, 2008; Shanahan et al., 2016), via the implementation of the tutorial programme based on the Threshold Concepts Theory.

This study elected to use the Myers-Briggs Type Indicator in conjunction with the Eysenck's Personality Theory, in order to assess the personality traits of the participants prior to and upon completion of the threshold concepts tutorial programme as per the affinities generated during

the Interactive Qualitative Analysis (IQA) methodology process. All participants, except for one, had undergone a change in their MBTI personality code, with some participants moving within quadrants and some even moving to different quadrants as per the Eysenck Personality Theory. These personality changes were attributed to how the participants learned Accounting 101 in a threshold concepts environment in a newly-designed online platform during the COVID-19 pandemic, prior to the commencement of their university's online learning programme.

13.2.4 Methodology

In Chapter Four, the learning paradigm selected, that of social constructivism, was described. The constructivist paradigm postulated that truth was deemed to be relative as it depended on one's own subjective perspective, allowing meaning to be created (Baxter & Jack, 2008). The learning paradigm or world view that the Threshold Concepts Theory was located in is social constructivism (Meyer, 2008). This study drew upon the principle of interpretivism, as the approach to research was to attempt to deeply understand the phenomenon. A qualitative case study design was used to allow for the understanding of the non-major accounting participants' experiences of their learning of Accounting 101 with a thick, rich description of the certain instance in time (Rule & John, 2011). This understanding that was generated by means of a case study was fitting for the interpretivist paradigm in which the study was located.

The research method used, Interactive Qualitative Analysis (IQA), was also consistent with that of interpretive, social constructivism, as it "privileges the nature of socially constructed meaning" (Northcutt & McCoy, 2004, p. 4). Northcutt and McCoy suggested that a focus group should ideally consist of twelve to twenty participants (Northcutt & McCoy, 2004, p. 87). Amongst other learning attributes, these participants should possess rich information regarding the objective of the study. The students should therefore shed light or different lights on the case study (Rule & John, 2011). This intended sampling choice made was that of purposive sampling. All Accounting 101 students were invited to participate in the study and a focus group of sixteen students participated in the programme. The duration of the study was constrained to the time available from the commencement of South Africa's lockdown due to the COVID-19 pandemic, to the commencement of the participants' university's online learning programme, being seven weeks. As the study commenced *after* the lockdown, this

meant that participants did not have the benefit of their mainstream lectures and tutorials and had to self-study before attempting the tutorial questions in the programme.

Data Collection and Analysis

Since the study was conducted during the COVID-19 pandemic, the data generation and data collection had to be adapted by using online platforms as per the convenience of the participants. All the participants indicated that they were comfortable using WhatsApp Messenger, as this was the most cost-effective method at their disposal. The first part of the methodology involved the use of semi-structured interviews. This part set the tone of the study as I got to know my participants. A Myers-Briggs Type Indicator semi-structured interview was conducted in order to understand what motivated and what troubled the participants.

The second part of the methodology involved the use of a set of Accounting 101 tutorial questions embedded with accounting threshold concepts that the participants attempted during the seven-week period. A bank of tutorial questions embedded with threshold concepts has been created for the discipline of economics and this was available from the Embedding Threshold Concepts (ETC) project created at Staffordshire University. After unsuccessfully conducting an extensive search for tutorial questions embedded with tutorial questions for Accounting 101 and other disciplines, a set of tutorial questions embedded with what I deemed to be threshold concepts for the discipline of Accounting 101 was created. These tutorial attempts were collected as a source of written reflection. Participants were requested to also reflect on their weekly experiences as they learned in a threshold concepts tutorial programme. This data was used to further validate and capture the affinities identified more deeply, from Phase One of the IQA process. Journaling is a student-centred tool used to identify if participants were making sense of the phenomenon being examined (Bouldin et al., 2006). These weekly journal entries were collected as another source of written reflection.

The third part of the methodology involved the use of the chosen methodology, Interactive Qualitative Analysis (IQA). This methodology was used to analyse a semester's worth of case studies that were held in the form of tutorial questions. The IQA methodology was conducted in two phases in order to generate data, the first via a focus group session and the second by means of semi-structured interviews. IQA has been used in the areas of educational psychology, economics and managerial accounting and finance to date. After an extensive search on which disciplines the IQA methodology had been applied to, it was concluded that

this was the first time it was applied to the discipline of accounting and more specifically, non-major accounting students studying Accounting 101, in conjunction with the Threshold Concepts Theory and the Myers-Briggs Type Indicator and Eysenck Personality Theory. Having a background in the commerce field made using this methodology very user-friendly, as it comprehensively listed each step of the process. Even though IQA is a predominately qualitative method, it incorporated quantitative data with qualitative data systematically (Bargate, 2015).

Phase One of the IQA methodology involved the use of a focus group to identify affinities, or as Northcutt and McCoy termed it "quilt pieces" regarding the phenomenon of the study. The participants then analysed the relationships amongst the affinities using an Affinity Relationship Table (ART). The relationships between the affinities were then mapped to produce an Inter Relationship Diagram (IRD). The final product was a visual representation of each affinity relationship that had emerged, a Systems Influence Diagram (SID). Phase Two involved conducting semi-structured interviews to validate the end product of Phase One, the Systems Influence Diagram (SID). This phase confirmed the Systems Influence Diagram (SID) results and provided a deeper meaning of the affinities created. Semi-structured interviews followed the same informal tone set in the focus group. The participants are made to feel comfortable enough to respond freely as opposed to using a 'yes' or 'no' response to the set of questions (Longhurst, 2003). The affinities identified in Phase One were used to formulate the interview questions and act as the codes to analyse the interviews. The last part of the methodology was conducted upon the conclusion of Phase Two of the IQA process. This involved conducting the Myers-Briggs Type Indicator semi-structured interview upon the completion of the study.

13.2.5 Findings

The focus group participants identified eight affinities from Phase One of the IQA process. The affinity pair relationships populated in the IRD were then used to create a visual representation of a system of drivers and outcomes called a SID. The system's affinities were presented from left to right, commencing with drivers and concluding with outcomes. The primary driver, a newly adopted holistic approach to learning, was presented on the extreme left with the primary outcomes: emotional responses and perceptions, presented on the extreme right. Secondary drivers: the demystified threshold concepts infused materials, learning challenges and learning

experiences; and the secondary outcomes: the various learning outcomes and learning attributes, were then placed in between the primary drivers and outcomes, with the secondary drivers on the left and the secondary drivers on the right (Northcutt & McCoy, 2004).

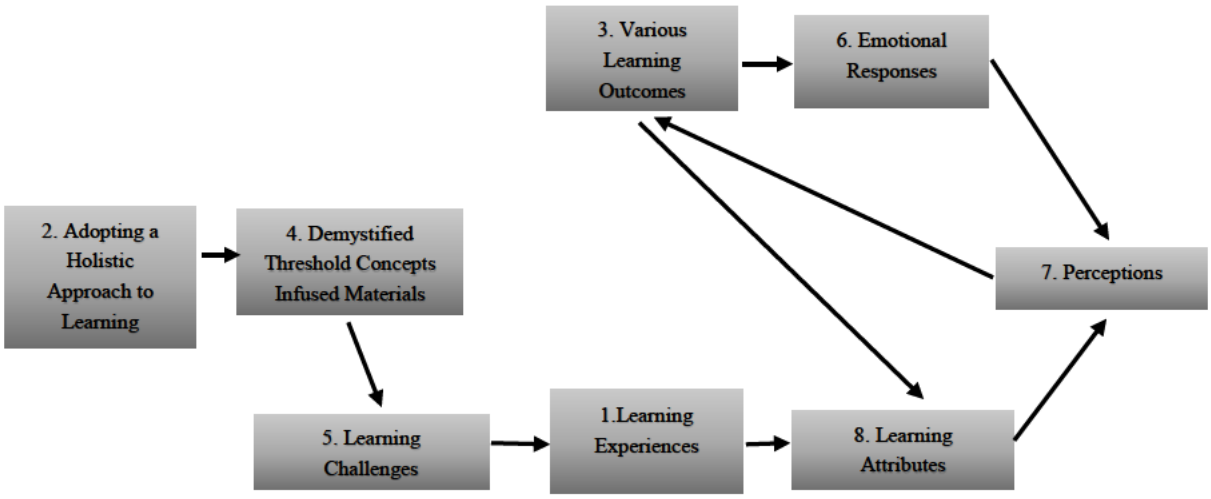

Figure 17: Uncluttered SID

A Tour Through the System

The Uncluttered SID in Figure 17 provided the following interpretation of the study with the participants: The holistic approach to learning adopted by the participants influenced how effectively they interacted with the Accounting 101 threshold concepts tutorial questions. The design of these demystified threshold concepts infused materials, the tutorial questions, also influenced the challenging dynamics of the discipline content. The learning challenges found within the discipline content influenced the learning experiences of the participants and in turn also influenced the learning attributes the participants discovered about themselves from this process. The learning attributes possessed also influenced the way in which the participants perceived themselves and the discipline, which in turn influenced them to acquire the various learning outcomes with more confidence. The acquisition of these various learning outcomes resulted in further learning attributes being acquired. This three-affinity micro system was representative of a feedback loop within the entire macro system. The perception participants possessed of themselves and the discipline, after acquiring further learning attributes, had the effect of influencing the various learning outcomes that they acquired. These various learning outcomes also had the effect of influencing the way the participants responded emotionally towards the discipline as well as the way they perceived themselves and the discipline throughout the study. The three-affinity micro system was representative of another feedback

loop within the entire macro system.

Epistemological Acrobatics: Zooming In, Zooming Out, and Looping

'Zooming in' involved the researcher focusing on one of the elements in the system and recognising a micro system within that particular element. 'Zooming out', however, involved the researcher recognising that this micro system was one of the elements within a larger macro system (Northcutt & McCoy, 2004). 'Looping' are the recursions that provided the researcher with the means to understand the complicated dynamics within the system, made up of at least three affinities that were representative of conventional social systems (Northcutt & McCoy, 2004). The two sets of micro systems or feedback loops identified for this study were as follows:

- Learning Attributes, Perceptions, Various Learning Outcomes, and
- Perceptions, Various Learning Outcomes, Emotional Responses

The name assigned to these micro systems was determined by analysing the axial coding session and affinity descriptions provided. The affinities of the first micro system suggested the name 'talented', which referred to the conceptual troublesomeness. The affinities of the second micro system suggested the name 'enjoyment', which referred to the emotional troublesomeness. These 'super-affinities' were substitute the feedback loops as one of the elements within the larger macro system.

2 – 4 – 5 – 1 – (8 – 7 – 3 – 8) – (7 – 3 – 6 – 7)

Figure 18: Telephoto View SID

The Clean SID or the Telephoto View SID (see Figure 18), is the Uncluttered SID version showing the redundant relationships in a devalued colour (Northcutt & McCoy, 2004). This Telephoto View SID (Northcutt & McCoy, 2004) was the same as the Uncluttered SID, except that it incorporated the feedback loops identified and cannot be zoomed out further, resulting in an overall linear view.

13.3 Limitations

When discussing the findings of this study, it was important to be cognisant of the limitations.

IQA methodology furnishes researchers with a rigid list of guidelines on how to collect data and how to analyse this data. The researcher provided the participants with a framework to engage in with a substantial degree of independence, before transitioning to that of a facilitator. IQA protocol entrusted this data collection and data analysis to that of the participants, implying that there was minimal researcher influence when conducting this methodology (Northcutt & McCoy, 2004). The power relations present in the tutorial programme followed the same dynamic as the IQA methodology, as the participants were responsible for taking charge of their learning by self-studying before attempting the threshold concepts tutorial questions. Even though the participants were motivated to self-study before attempting the threshold concepts tutorial questions, the absence of mainstream lectures and tutorials was a limitation experienced by the participants, especially for those who did not study accounting in their schooling careers.

The data collected was from one group of first-year non-major accounting students learning Accounting 101 who volunteered to participate in the programme. This study was limited to being conducted by just one discipline expert for a limited period of time of one semester. There was no intention to select a sample representing the classroom, but instead to only appeal to students who were willing to participate in all the activities of the study and to provide me with rich data. The findings of the study revealed the perspectives of the participants only. The perspectives of other stakeholders: other discipline experts, tutors, students from the mainstream classroom who did not participate, and external stakeholders, were not taken into account, as their perspectives may have brought about different findings. Due to the limitations imposed on this qualitative case study, the findings may not be generalised beyond the specific context of the participants. Despite the criticism of a case study, being generalisability, they are however used to provide a deeper, holistic view in order to understand the phenomenon (Rule & John, 2011) and to provide direction for future related studies.

As IQA protocol heavily relied on the influence of the participants, the limitation was that this could present potential bias when reporting on one's experiences (Matas et al., 2011) in the threshold concepts tutorial programme. These experiences had to be utilised as a true indication of their understanding (Human-Vogel, 2006), however. As I was the researcher, facilitator and one of the discipline experts at their university, I also had to be cognisant of the relationship dynamics throughout the study as the perceptions of the participants could be distorted as a result of this bias, regardless of the protocol I implemented in order to create a safe and comfortable space.

Despite being aware of the fact that intrinsic factors and backgrounds, for example academic capabilities, academic experiences, and personal backgrounds etc., would cause each participant to experience the threshold concepts tutorial programme differently, these factors were not investigated beyond the programme. However, the non-major accounting participants were asked if they had studied accounting in their schooling careers in order to determine the extent of their exposure to the discipline under investigation.

As participation did not contribute towards their duly performance or final assessment (Adler & Milne, 1997) of the discipline, this study had to rely on the benevolence and self-motivation of the participants to learn in advance during the seven-week period prior to the commencement of their university's online learning programme. The participants were made aware of the activities they were required to participate in, prior to the commencement of the programme.

The implementation of this threshold concepts tutorial programme to all non-major accounting students learning Accounting 101 was a very resource-intensive endeavour regarding the time and energy required by myself as researcher (Steenkamp et al., 2012) in a newly- designed online platform. This programme would not be feasible in the future as it would require approximately 30 tutorial groups of approximately 20 students, conducted by approximately 30 tutors who would require training on the Threshold Concepts Theory. If this programme was conducted using a face-to-face platform, then approximately 30 tutorial venues would be required to accommodate all students. The university resources, being the budgets, staff, venues and time available as per the mainstream timetables, could prove to be a limitation when trying to offer this programme to all students across three campuses. The performance of the participants as a result of this intervention was, however, not the purpose of implementing this programme, but rather to deeply understand how participants learned accounting in this

threshold concepts tutorial environment.

13.4 Implications and Suggestions for Further Research

As the study was conducted at the commencement of the COVID-19 pandemic, the IQA protocol had to be adapted in order to collect data using an online platform. Prior studies using IQA have also had to adapt their use of the IQA protocol in order to accommodate their studies (Human-Vogel, 2006; Human-Vogel & Mahlangu, 2009; Lodewyckx, 2007; Tabane & Human-Vogel, 2010). The commonality amongst these prior studies was that all had been implemented in the traditional face-to-face environment. As these participants hailed from a range of programmes in their first year of study, finding a common time for the participants to meet weekly in the traditional face-to-face environment proved to be a challenge. The pandemic and the seven-week period available prior to the commencement of the participants' university's online programme, proved to be the solution to the challenge. However, the utilisation of an online platform to conduct the IQA process meant that the study had to be adapted based on the resources available to the participants. These resources were cellular telephone data, Wi-Fi data, signal from their respective service providers, the electronic devices used, a study environment, and time. Depending on the resources available to all participants, future researchers could use the IQA process with higher cost online platforms such as Zoom, Loom or Skype, to incorporate the visual component. A further suggestion for future research would be to conduct this study with non-major accounting students studying Accounting 101 using the IQA process in a face-to-face environment.

As IQA protocol entrusted the data collection and data analysis to that of the participants, with minimal researcher influence (Northcutt & McCoy, 2004), this implied that the entire IQA process depended on that of the participants of the focus group. The IQA methodology explored the use multiple viewpoints (Baxter & Jack, 2008) for this case study research: a focus group session, semi-structured interviews, reflective learning journals and WhatsApp Messenger chats. These served as a form of triangulation to confirm the findings (Guba, 1981). I do, however, acknowledge that the implementation of a different methodology for data collection and data analysis may have produced different findings.

The participants have registered for their respective programmes at a SAICA accredited university. Discipline experts who have taught the discipline of Accounting 101 hailed from the Bachelor of Commerce in Accounting programme. The design of this discipline has met the competencies required by SAICA in order to become a chartered accountant. The challenge inherent in this this classroom was that a design applicable to the non-major accounting students has not been developed to accommodate this student group. The framework in Figure 19, in section 13.5, describes the non-major accounting students' learning of Accounting 101. This learning pertained to the learning of threshold concepts in a tutorial programme. The threshold concepts, referred to as the "jewels in the curriculum" (Meyer et al., 2010, p. 75), can also be used to as the focal point for learning tasks at a programme level, as opposed to the onerous learning outcome level employed per discipline. The framework may be able to support the design of the pedagogy, curriculum, assessment style and the delivery thereof applicable to non-major accounting students, without having to meet all the competencies required by SAICA. The reason the identification of the threshold concepts of the discipline was considered to be difficult and laborious, was that the threshold concept "lies in the eyes of the beholder" (Decker, 2006, p. 30). Due to the subjective nature of this process, I elected to conduct an analysis to determine what I deemed to be the threshold concepts in the Accounting 101 discipline. A suggestion for future research would be to have other discipline experts conduct an analysis in order to determine what they deemed the threshold concepts of the Accounting 101 discipline to be.

Discipline experts from Staffordshire University, in the field of economics, were the first to undertake a project, aimed at creating a set of tutorial questions that incorporated threshold concepts. This project, the Embedding Threshold Concepts (ETC) project, utilised scenarios from everyday life in order to determine whether a student's thinking had transformed to that of an economist (Meyer & Land, 2006/). A suggestion for future research would be to have other discipline experts create their own threshold concepts tutorial questions relevant to their discipline using the design of the ETC project and or my design. This research may also inspire discipline experts to create their own threshold concepts design, based on the design of the ETC project and or my design.

Participants indicated that they enjoyed having a WhatsApp Messenger group chat to share their experiences throughout the study. The reflective learning journals were also another tool for participants to diarise their experiences. This small group was a safe space or supportive 'holding environment' (Cousin, 2008; Land et al., 2016) that the participants used to navigate their way through the liminal phase of learning when they encountered troublesome knowledge. Learning in itself, is a type of identity work that allows us to draw our attention to the affective aspect of learning in a Threshold Concepts Theory environment. A suggestion for future research would be to have discipline experts create smaller groups that encouraged the use of reflective learning journals, in order to furnish students with a platform that would provide them with emotional support from each other when they encountered emotional trouble in their learning journey.

The Threshold Concepts Theory has undertaken to investigate the interdisciplinarity aspect amongst fields of study as it provided a degree of comparability in an otherwise incomparable interdisciplinarity environment (Land et al., 2016). This implied that disciplines within a programme will overlap, or integrate with other each other in an assortment of ways, with researchers providing fresh perspectives of these overlaps over time (Klein, 1990). As the participants hailed from three different programmes, the only overlap I could identify was that of the discipline of Accounting 101 being present in each of the programmes. Therefore, instead of conducting the research amongst many disciplines within one programme, i.e. interdisciplinarity, this study instead conducted research amongst many programmes that housed the discipline chosen to investigate, that of Accounting 101, and more specifically, the participants who had no intention of majoring in this discipline upon completion the of their chosen programmes. Based on these programmes, this study has introduced the word 'interprogramminarity' for future researchers to utilise when investigating similar disciplines to Accounting 101, that fit these criteria.

13.5 Towards a Framework of Non-Major Accounting Students' Learning of Accounting 101 in a Threshold Concepts Tutorial Programme

The objective of universities is to create an environment that allowed students, studying their chosen programmes, to deeply understand the knowledge taught by discipline experts, and therefore to be able to think in the discipline.

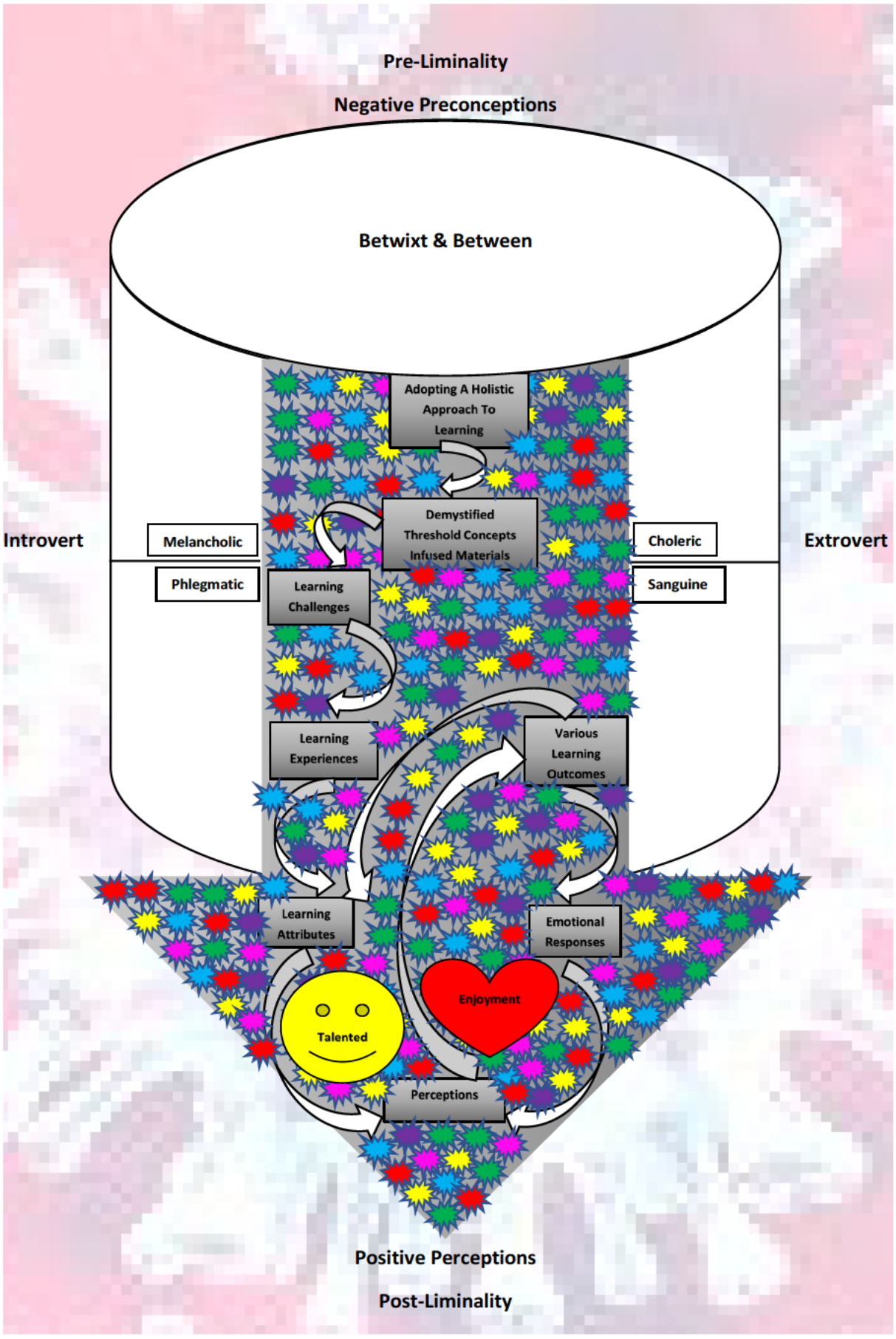

Figure 19: Down the Rabbit Hole

The framework provided in Figure 19 describes the learning journey of non-major accounting students' learning of Accounting 101 in a threshold concepts tutorial programme. This framework implies that the means formulated, the threshold concepts tutorial programme, to assist students to overcome the conceptual as well as the emotional trouble encountered (Land et al., 2016), should allow students to experience a transformed way of thinking in the discipline, as well as a transformation of their personality traits.

The concept of 'interprogramminarity' created in the findings of the study was used to describe research conducted amongst many programmes that housed the same discipline, Accounting 101 for this study. This concept will allow discipline experts to use the framework provided in Figure 19 to teach non-major students from programmes, in addition to the programmes used in this study, that fit these criteria, to think in the discipline.

The innovation offered when designing the threshold concepts tutorial questions, was the amalgamation of the Embedding Threshold Concepts (ETC) practice-theory connection (Meyer & Land, 2006) with the practice-theory-practice connection (Hedges, 2014) and the purpose of a fairy tale (Miley, 2005), in addition to the continued use of an actual fairy tale, *Alice in Wonderland*, throughout the study.

The word used to describe the threshold concepts learning journey is 'liminality'. Liminality can be likened to that of *Alice in Wonderland* falling down the rabbit hole. Alice had preconceptions before entering the rabbit hole i.e. in the pre-liminal phase. Accounting 101 students, just like Alice, also have preconceptions before entering the classroom. They are generally negative preconceptions (Azevedo & Sugahara, 2012) or negative emotions that they encounter in the pre-liminal phase. Researchers have acknowledged the need for accounting discipline experts to employ innovative methods of assessment that not only promoted an environment that allowed students to develop the ability to interact with people and data in order for them to achieve academic success, but also confronted the negative preconceptions of the discipline (McGuigan & Kern, 2010). This threshold concepts tutorial programme was designed relevant to students who did not want to further their studies of the non-major discipline, or for those students who displayed an aversion to the discipline. The design was an innovative and an appropriate method of assessment that would allow for a smoother transition with something familiar, *Alice in Wonderland* and rabbits, towards something unfamiliar about which students already possessed negative preconceptions, Accounting 101 (Miley, 2005).

As this study likens liminality, the bewildering betwixt and between space that is neither here nor there, to that of *Alice in Wonderland* falling down the rabbit hole, a downward facing tunnel was used to illustrate the framework. The learning journey described above in Figure 19 has been illustrated from top to bottom in a downward-facing arrow within a downward-facing rabbit hole to indicate the direction of the learning journey from commencement to completion. The white arrows within the downward facing arrow indicate the direction the students will traverse from one point to the next in their learning journey. The non-linear, oscillatory path illustrated by the white arrows in the downward facing arrow, also represents the haphazard journey that Alice encountered when falling down the rabbit hole. This haphazard journey involved Alice free-falling, being suspended, and even tumbling upside down, much like students when they embark on their learning journeys.

The theory indicates that if all concepts in this downward facing arrow are in harmony, then this would allow students to successfully navigate their way through this learning journey to the mastery of the discipline. The learning journey is driven by non-major students '*adopting a holistic approach to learning'*. After being exposed to the dynamics of the threshold concepts tutorial question, students are then able to incorporate this new approach of learning to their existing one, with some students being comfortable to utilise this new approach exclusively. The threshold concepts tutorial programme has the effect of disrupting traditional approaches to learning with an alternative one. The newly adopted holistic approaches to learning should allow students to effectively engage with the '*demystified threshold concepts infused materials'*. This is dependent on the students resonating with the demystified design of the threshold concepts tutorial questions and them grasping the detailed explanations of the threshold concepts in the relevant tutorial question in order to acquire a better understanding. A deeper understanding of the threshold concepts implies that students should adopt the techniques provided by the demystified threshold concepts infused materials, therefore enabling them to confront the '*learning challenges'* and to no longer perceive them as obstacles in their learning journey. This deeper understanding should result in students enjoying their '*learning experiences'*, therefore allowing them to be more confident with their knowledge of the discipline and develop further *'learning attributes'*. The learning attributes acquired have the effect of improving the students' *'perceptions'*. This shift in perception of the discipline and of one's self should motivate students to remain focused and therefore work harder on acquiring positive '*various learning outcomes'*. These various learning outcomes may be discipline-specific outcomes or social outcomes.

The various learning outcomes produced had the effect of influencing the 'talent' and the 'enjoyment' of the students, each depicted in a loop dynamic. The '*talented'* loop dynamic indicates that the various learning outcomes acquired will allow the students to develop additional learning attributes, and therefore a further improvement of their perceptions of the discipline and themselves. This talent loop would ultimately allow a student to address the conceptual trouble that they encounter during their learning journey. The *'enjoyment'* loop dynamic indicates that the various learning outcomes acquired during the tutorial programme should boost the morale of the students, allowing them to be more confident in their ability to overcome new learning challenges. This '*emotional response'* to the various learning outcomes acquired, should cause students to feel more excited about the threshold concepts of the discipline and the perception of the discipline and themselves upon completion of their learning journey. This enjoyment loop would ultimately allow a student to address the emotional trouble that they encounter during their learning journey.

The rabbit hole in the framework depicted the Eysenck Personality Theory quadrants (Bencsik et al., 2016). These quadrants indicate that a student may only belong to one of the four Eysenck temperaments after completing a MBTI semi-structured interview. The quadrants are determined using the dimension of attitudes identified: extraversion, that could describe a student as choleric or sanguine; and introversion, that could describe a student as melancholic or phlegmatic. The second dimension used the emotional responses students possessed in the liminal learning journey: negative preconceptions in the pre-liminal phase and positive perceptions in the post-liminal phase. These dimensions allow researchers to determine which of the two temperaments, extraverted and introverted, students possessed. The study encourages researchers to conduct this personality assessment prior to and upon completion of the learning journey in order to determine if there was any change thereof.

The arrow in the original *Alice in Wonderland* movie, comprises colourful, flower-like creatures called 'mome raths', that indicated the direction to the completion of Alice's journey, her home. This arrow also symbolised the direction to the completion of a student's learning journey, the post-liminal phase of learning where mastery of the discipline has occurred. This framework implies that non-major accounting students are able to overcome the conceptual, as well as the emotional trouble encountered (Land et al., 2016), as illustrated by the 'talented' and 'enjoyment' loops respectively, when learning in a threshold concepts inspired tutorial programme. The experiences students encounter when engaging with the demystified threshold

concepts tutorial materials should eliminate their negative preconceptions and allow them to experience a transformed way of thinking in the discipline, as well as a transformation of their personality traits. The watermarked background in this framework are images of the coronavirus disease (COVID-19), indicating that it is also feasible to use the framework during an uncertain time in an online learning platform.

13.6 Conclusion

The written reflections of the participants: the semi-structured interviews conducted, the affinity descriptions, the affinity pair relationships identified, and the reflective learning journals, provided a detailed description of the experiences of the non-major accounting students' learning of Accounting 101 in a threshold concepts tutorial programme. These descriptions yielded a holistic view of the conceptual and emotional experiences of the participants that went beyond the boundedness of the conventional experiences discipline experts have encountered. The framework illustrated in Figure 19 provided a graphical representation of the responses to the study.

In order to reach mastery of the threshold concepts of the discipline, an attitude shift regarding the discipline was imperative in order to eliminate the negative preconceptions that non-major accounting students possessed towards the discipline of Accounting 101. Participants were also made aware of the conceptual as well as the emotional trouble that they would encounter as they entered the liminal phase of learning. Participants were, however, assured of the safe space or "holding environment" in this liminal phase in order to make them feel comfortable about entering this phase.

The pedagogy, curriculum and assessment style of this threshold concepts tutorial programme was designed in order to attempt to accommodate non-major accounting students' learning of Accounting 101. The participants were very critical (Azevedo & Sugahara, 2012; Fisher & Murphy, 2006; Gronow & Morrison, 2017; Meyer & Land, 2006; Partin & Haney, 2012) when reflecting upon the negative perspective of their learning challenges and emotional responses regarding the conceptual trouble from the commencement of the programme. However, they indicated overall that their initial negative preconceptions of the discipline were actually false and that upon completion of the programme, their experiences of Accounting 101 were not as

bad as they had initially imagined it to be.

Despite the participants possessing all of the resources for the collection of data in an online platform: that of data, signal, devices, and a study environment, a few participants indicated that they encountered trouble with some of these resources at points during the programme. They had equal responses to the range of all possible responses as to how the lockdown affected them emotionally: no effect, negatively and positively. This enquiry was imperative as it provided insight regarding the emotional trouble experienced by the participants, when learning in a threshold concepts tutorial programme.

The purpose of a threshold concept was to provide a transformed way of thinking about the conceptual and emotional trouble encountered. The findings of the study indicate that participants had experienced a transformed way of thinking to that of an accountant, as well as a transformation of their personality traits, that were attributed to how these non-major accounting students learned Accounting 101 in a threshold concepts tutorial programme, in a newly-designed online platform during the COVID-19 pandemic.

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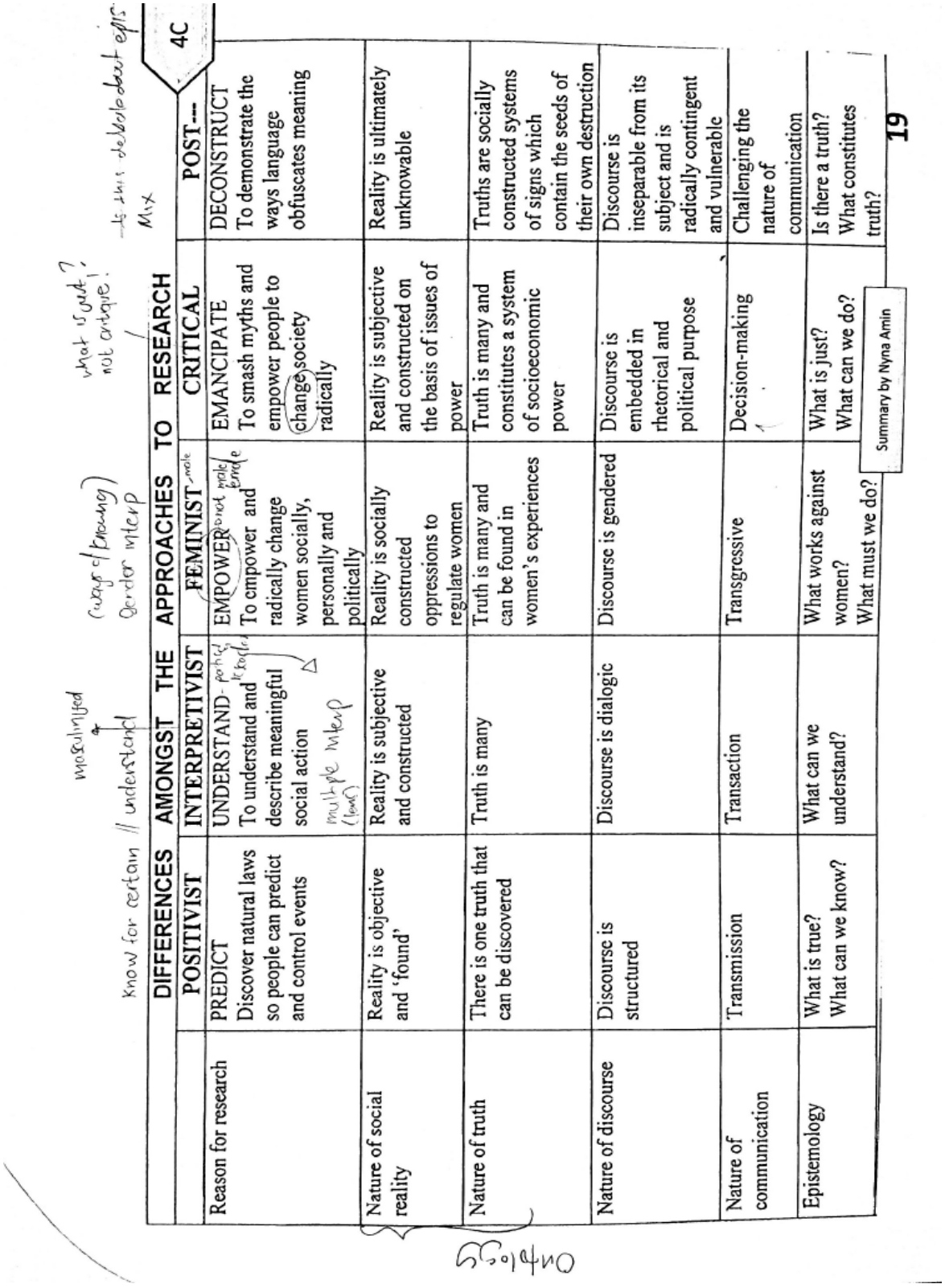
ANNEXURES

Annexure 1: Learning Paradigms_Teaching Tool Compiled by Nyna Amin



DIFFERENCES AMONGST THE APPROACHES TO RESEARCH

	POSITIVIST	INTERPRETIVIST	FEMINIST	CRITICAL	POST---
Reason for research	PREDICT Discover natural laws so people can predict and control events	UNDERSTAND- To understand and describe meaningful social action	EMPOWER To empower and radically change women socially, personally and politically	EMANCIPATE To smash myths and empower people to change society radically	DECONSTRUCT To demonstrate the ways language obfuscates meaning
Nature of social reality	Reality is objective and 'found'	Reality is subjective and constructed	Reality is socially constructed oppressions to regulate women	Reality is subjective and constructed on the basis of issues of power	Reality is ultimately unknowable
Nature of truth	There is one truth that can be discovered	Truth is many	Truth is many and can be found in women's experiences	Truth is many and constitutes a system of socioeconomic power	Truths are socially constructed systems of signs which contain the seeds of their own destruction
Nature of discourse	Discourse is structured	Discourse is dialogic	Discourse is gendered	Discourse is embedded in rhetorical and political purpose	Discourse is inseparable from its subject and is radically contingent and vulnerable
Nature of communication	Transmission	Transaction	Transgressive	Decision-making	Challenging the nature of communication
Epistemology	What is true? What can we know?	What can we understand?	What works against women? What must we do?	What is just? What can we do?	Is there a truth? What constitutes truth?

Summary by Nyna Amin

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Annexure 2: Request to Conduct Research

REQUEST TO CONDUCT RESEARCH

COLLEGE OF LAW AND MANAGEMENT STUDIES
SCHOOL OF ACCOUNTING, ECONOMICS & FINANCE
University Road, Westville, 3630
Private Bag x 5400, Durban, 4000
Telephone (031) 260 4000

Dr K. Cleland
(Acting) Registrar
School of Accounting, Economics & Finance
11 March 2020

Dear Dr Cleland
PERMISSION TO CONDUCT RESEARCH AS PART OF PHD QUALIFICATION
Name: Sasha Padayachi
Student number: 202512331
PhD Thesis: Non-Major Accounting Students' Learning In A Threshold Concepts Inspired Tutorial Programme.

I am currently registered for a PhD in Education and plan to undertake data collection from March 2020 to May 2020. I propose to gather data from a focus group session, individual interviews, participant tutorial submissions and reflective journals, and request your permission to invite students in Accounting 101 (Westville) to volunteer to participate.

Your assistance in granting me access to the Accounting 101 students will be most appreciated. Please be assured that all information gained from the research will be treated with the utmost caution. I will strictly adhere to confidentiality and anonymity.
If permission is granted, it is required to be in writing on a letterhead signed by you.
The details of the Research Ethic Office are as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office

Westville Campus Govan Mbeki Building Private Bag X 54001

Durban 4000

KwaZulu-Natal South Africa

Tel: 27 31 2604557

Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.zaSimangele Shezi Research Office HSSREC Administrator

University of KwaZulu-Natal Westville Campus

Tel: +27 31 260 3587

Thank you for your assistance in this regard.

Kind regards

Sasha Padayachi

School of Accounting, Economics & Finance

Annexure 3: Permission to Conduct Research

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

21 October 2019

Ms Sasha Padayachi (SN 202512331)
School of Accounting, Economics and Finance
College of Law and Management Studies
Westville Campus
UKZN
Email: padayachis@ukzn.ac.za

Dear Ms Padayachi

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal (UKZN) towards your postgraduate studies, provided Ethical clearance has been obtained. We note the title of your research project is:

"Non-Accounting Students' Learning of Accounting through a Threshold Concept Approach."

It is noted that you will be constituting your sample by conducting interviews and/or focus group discussions with students registered for the Accounting 101 module on the Westville campus.

Please ensure that the following appears on your notice/questionnaire:

- Ethical clearance number;
- Research title and details of the research, the researcher and the supervisor;
- Consent form is attached to the notice/questionnaire and to be signed by user before he/she fills in questionnaire;
- gatekeepers approval by the Registrar.

You are not authorized to contact staff and students using 'Microsoft Outlook' address book. Identity numbers and email addresses of individuals are not a matter of public record and are protected according to Section 14 of the South African Constitution, as well as the Protection of Public Information Act. For the release of such information over to yourself for research purposes, the University of KwaZulu-Natal will need express consent from the relevant data subjects. Data collected must be treated with due confidentiality and anonymity.

Yours sincerely

[redacted]

DR KE CLELAND
REGISTRAR (ACTING)

Annexure 4: Ethical Clearance

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

15 April 2020

Miss Sasha Padayachi (202512331)
School Of Education
Edgewood Campus

Dear Miss Padayachi,
Protocol reference number: HSSREC/00001249/2020
Project title: Non-major Accounting Students' Learning in a Threshold Concepts Inspired Tutorial Programme.
Degree: PhD

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 23 March 2020 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

This approval is valid until 15 April 2021.
To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

HSSREC is registered with the South African National Research Ethics Council (REC-040414-040).

Yours sincerely,

[redacted]

Professor Dipane Hlalele (Chair)

/dd

Annexure 5: Informed Consent

INFORMED CONSENT

COLLEGE OF LAW AND MANAGEMENT STUDIES
SCHOOL OF ACCOUNTING, ECONOMICS & FINANCE
University Road, Westville, 3630
Private Bag x 5400, Durban, 4000
Telephone (031) 260 4000

UNIVERSITY OF
KWAZULU-NATAL

Dear Student

I am conducting research into non-accounting students' learning of Accounting 101 through a threshold concepts approach at the University of KwaZulu-Natal, Westville.

The research is being undertaken by me, Ms Sasha Padayachi, Lecturer in the School of Accounting, Economics and Finance, to fulfil the requirements of a PhD in Education. My contact details are: Room 120, J Block, Westville campus, UKZN. My office telephone number is 0312607436; email Padayachis@ukzn.ac.za. Further information on the project may be obtained from my supervisor, Prof. S.M. Maistry, Edgewood campus, UKZN, office telephone 0312603457.

I wish to obtain your consent to conduct a focus group session, an individual interview with you, and to utilize your written submissions (tutorial assignments and reflective journal), in order to synthesize my study. The focus group session, individual interview and reflective journal writing will be about your views on learning accounting concepts. The duration of the focus group session and individual interview will be about 60 and 30 minutes respectively. Video and/or audio recordings will be made, and discussions will be transcribed and coded for study. Your transcribed individual interview will remain confidential at all times, and your anonymity is guaranteed. This will be achieved through the use of codes and/or pseudonyms. The transcribed individual interview will be kept in a safe place within the School of Education as per research requirements. At the end of five years the transcribed individual interview will be destroyed by shredding.

Please note that your participation in the study is voluntary, and a decision not to participate will not result in any form of disadvantage to you. Participants have the right to withdraw at any stage and for any reason without any negative consequences.

The details of the Research Ethic Office are as follows:
HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION
Research Office
Westville Campus Govan Mbeki Building
Private Bag X 54001
Durban
4000

KwaZulu-Natal
South Africa
Tel: 27 31 2604557
Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

Simangele Shezi
Research Office
HSSREC Administrator
University of KwaZulu-Natal
Westville Campus
Tel: +27 31 260 3587

DECLARATION OF INFORMED CONSENT

I, ……(full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project. I understand that I am at liberty to withdraw from the project at any time, without any negative consequences, should I so desire.

I hereby provide consent to:	
Audio-record my individual interview and focus group discussion	YES / NO
Video-record my individual interview and focus group session	YES / NO
Use of my written work for research purposes	YES / NO

…… ……

SIGNATURE OF PARTICIPANT **DATE**

Getting to Know You

Name: _____

Cell phone Number: _____

What programme are you studying? _____

Did you study Accounting at School?: _____

If yes, did you enjoy it?: _____

If no, what are your preconceptions about Accounting 101 before entering the classroom?

_____
_____
_____
_____
_____

What are your preconceptions and expectations about the Threshold Concepts Theory before we start our tutorial programme?

_____
_____
_____
_____
_____

Annexure 7: Myers-Briggs Type Indicator Semi-Structured Interview

Myers-Briggs Type Indicator Semi-Structured Interview

The purpose of the Myers-Briggs Type Indicator (MBTI) Personality Test is to make individuals aware of what drives them, what motivates them and what troubles them in order to be successful in life. The test comprises of 20 questions that require you to circle the most accurate of two options:

1. **a.** expend energy, enjoy groups or **b.** conserve energy, enjoy one-on-one
2. **a.** interpret literally or **b.** look for meaning and possibilities
3. **a.** logical, thinking, questioning or **b.** empathetic, feeling, accommodating
4. **a.** organised, orderly or **b.** flexible, adaptable
5. **a.** more outgoing, think out loud or **b.** more reserved, think to yourself
6. **a.** practical, realistic, experiential or **b.** imaginative, innovative, theoretical
7. **a.** candid, straight forward, frank or **b.** tactful, kind, encouraging
8. **a.** plan, schedule or **b.** unplanned, spontaneous
9. **a.** seek many tasks, public activities, interaction with others or
   b. seek private, solitary activities with quiet to concentrate
10. **a.** standard, usual, conventional or **b.** different, novel, unique
11. **a.** firm, tend to criticise, hold the line or **b.** gentle, tend to appreciate, conciliate
12. **a.** regulated, structured or **b.** easy-going, "live" and "let live"
13. **a.** external, communicative, express yourself or **b.** internal, reticent, keep to yourself
14. **a.** focus on here-and-now or **b.** look to the future, global perspective, "big picture"
15. **a.** tough-minded, just or **b.** tender-hearted, merciful
16. **a.** preparation, plan ahead or **b.** go with the flow, adapt as you go
17. **a.** active, initiate or **b.** reflective, deliberate
18. **a.** facts, things, "what is" or **b.** ideas, dreams, "what could be," philosophical
19. **a.** matter of fact, issue-oriented or **b.** sensitive, people-oriented, compassionate
20. **a.** control, govern or **b.** latitude, freedom

Annexure 8: Issue Statements: Phase 1 of Interactive Qualitative Analysis (IQA)

ISSUE STATEMENTS: Phase 1 of Interactive Qualitative Analysis (IQA)

The first phase of the Interactive Qualitative Analysis (IQA) (Northcutt & McCoy 2004) research methodology involves representing the meaning of the phenomenon, 'learning' in the case of my study, by generating themes or affinities in terms of the phenomenon and any resultant relationships between them.

Phase 1 of Interactive Qualitative Analysis (IQA): Issue Statements for Focus Group

1. What were your experiences when learning Accounting 101 concepts in the tutorial programme?
2. What was your approach to learning Accounting 101 this semester?
3. What was the outcome of your learning of Accounting 101 this semester?
4. Have you found the tutorials effective in helping you learn Accounting 101?
5. Which threshold concepts tutorials did you find challenging?
6. How did you feel when learning Accounting 101 this semester?
7. What was your perception of yourself throughout your learning of Accounting 101 this semester?
8. Can you describe specific attributes you have acquired or fine-tuned as a result of your participation in the threshold concepts infused tutorial programme?

Annexure 9: Focus Group Issue Statements Received Collated

ISSUE STATEMENTS FOR FOCUS GROUP

1. WHAT WERE YOUR EXPERIENCES WHEN LEARNING ACCOUNTING 101 CONCEPTS IN THE TUTORIAL PROGRAMME?

1	Extremely informative
2	Beneficial
3	Effective outcomes
4	Concepts understood in a more interesting way
5	TC seemed more helpful than the lecture content
6	I was nervous but now I'm confident
7	Found the tutorials to be informative and understandable
8	Great experience
9	Found improvements in my learning styles
10	Found it helpful as it got me learning during this pandemic
11	The tutorial programme has the only source of learning in some areas
12	The TC explanation helped in getting me to understand each concept
13	Because of Sasha, this has felt like more than a tutorial programme, it's sorta like a Cause now
14	It was very helpful
15	It broadened my knowledge of the accounting 101 concepts
16	I learned to look at accounting in a reflective way in keeping with the threshold concepts
17	They were very useful as it helped to revise on those concepts
18	It was also very beneficial as it helped clear up certain misunderstandings
19	My experience while learning Acc 101 through the tut programme has been very enlightening
20	It opened up my mind to new learning methods
21	My experiences with learning Accounting 101 concepts was quite unique, helpful and informative to understanding.
22	It was a great experience
23	I began to acknowledge my mistakes and learnt from it
24	Learning certain concepts without the aid of a tutor/lecturer did prove to be challenging
25	However I gained more confidence in the subject
26	Learning to link concepts was another skill gained
27	As well as perseverance while stuck on a problem
28	I think my experience was good
29	Learning the Accounting 101 was stress free and easy to understand
30	Knowing the key concepts was very important and getting notes that steered me into the right direction
31	Things become more easier
32	Threshold concepts explained well to me they give me exactly what I'm looking for in Accounting 101
33	I feel its helping me learn at a faster pace than I would have otherwise
34	It was a learning experience which helped me identify the basics of accounting to an extent.
35	The threshold concepts help me understand in what way I need to approach my learning in accounting 101

2. WHAT WAS YOUR APPROACH TO LEARNING ACCOUNTING 101 THIS SEMESTER?

36	Going over lecturer's notes
37	Doing activities given as work
38	Self- learn textbook chapters to learn as much as could understand
39	Attempting and re-doing Tutorial questions from programme
40	Making my own notes
41	Learning Accounting was also very challenging
42	It felt scary to learn new things at first
43	Memorise it instead of understanding it
44	At first I was nervous with regards to studying this subject as it had always been a challenge
45	Eventually open minded and ready for challenges
46	With this tutorial group and my experience thus far I have realised the concept of quality over quantity
47	My original approach was to listen in class and get as many Acc friends as possible
48	I now study Acc with online learn accounting website
49	To gather as much knowledge as possible and practice as much as I could
50	Attend my lectures
51	Refer to past resources from high school and work with it everyday
52	Look at the subject more positively and not beating myself us for getting things wrong
53	Also watch videos that might help me get a better understanding
54	My approach was to work harder and be more attentive in working
55	To try and understand concepts I had difficulty with
56	To read each question carefully and analyse each aspect of the question
57	To understand exactly what they require me to do
58	I did not like accounting at first, it was a scary subject for me because I felt like I was confused
59	To read and understand concepts of a chapter, then move on to practice examples of it
60	I find past papers to be quite useful as well
61	Understanding for me because some concepts I don't understand clearly and I would forget and struggle in the past
62	For me I would take my time in trying to understand and ensure that whatever I was having a problem with is properly understood
63	I started by learning basic concepts
64	Reading lecture slides and attempting every tutorial we are given
65	Following the lecture outlines and tuts
66	I was scared as I did not do accounting in school so was worried about grasping the concepts
67	I was concerned as to how I will grasp all accounting concepts in a space of less than 6 months

3. WHAT WAS THE OUTCOME OF YOUR LEARNING OF ACCOUNITNG 101 THIS SEMESTER?

68	More confidence
69	More positive
70	Great experience
71	Gained more confidence
72	Get knowledge
73	The tutorials have been effective
74	Learned to join concepts
75	Get experience
76	Thus with regards to the concept test performed better than expected
77	Helped me understand concepts through self teaching
78	Allowed me to spend more time on this individual module
79	I don't really know yet, I haven't gotten a chance to prove myself
80	Accounting 101 has been a lot of fun to learn
81	It was more enjoyable than I expected it to be
82	There have been many things that have learnt that I could use in my future financially
83	I'm not quite sure yet, but I felt somewhat confident
84	I understand the method and concepts
85	I feel more at ease that I can attempt these types of questions
86	It was extremely beneficial as I learnt new things about Acc that I never knew in high school
87	It helped me understand Acc better
88	It was a real eye opener as I discovered there was more to my potential that I could ever imagine
89	I gained self confidence and I learnt to link different concepts to make sense of my work and I learnt to link different concepts to make sense of my work
90	Considering not all chapters have been covered as yet, from what has been completed thus far, I can say I view the subject differently – in the sense where I have learnt the reason behind concepts which has allowed me to apply them more appropriately
91	It has also made me realise the importance of Accounting and the vital part it plays in our everyday lives
92	From the onset, these Threshold Concepts brought nervousness but as time goes on, I gained confidence towards Accounting 101 hence it improved me dramatically and in general work ethic
93	I am not completely there in terms of my understanding but it has improved immensely
94	Learning Accounting 101 this semester has taught me to be able to learn on my own and find understanding on my own
95	Now I am familiar with many concepts in Accounting
96	I think I'll be well prepared for exam
97	Quite good I feel
98	Still really hard Identifying and grasping the basics
99	The lecturer made it quite simple and I was grasping and understanding the concepts but due to the corona virus it made self-study of accounting really challenging

4. HAVE YOU FOUND THE TUTORIALS EFFECTIVE IN HELPING YOU LEARN ACCOUNTING 101?

100	Yes, I have found the tutorials in the Accounting 101 program extremely effective
101	With these tutorials it gave me a chance to help test my knowledge, eliminate my errors and learn new concepts
102	The tut group was helpful
102	I can apply it to real life situations
104	During this pandemic it was very helpful as the threshold concepts gave me a clear insight to the concepts
105	Began to put my understanding into practice
106	Yes the tutorials give a student a chance to get practical
107	Accounting needs practice and the tutorials are that practice
108	Yes, it has made learning Accounting 101 much more easier
109	Yes, the tutorials in the study
110	The ones in the main module, no.
111	I just go for the DP
112	Yes, I have
113	Yes, it has
114	It was helpful and very understanding
115	The tutorials were average because I wasn't taught the threshold concepts before attempting it. Once I became aware of the concepts it became a little more helpful to me
116	The tutorials, alongside the explanations proved to be useful
117	More exercises to enforce concepts learnt would prove to be valuable
118	I can talk about Acct 101 to my peers with confidence especially the who did not do it
119	I can apply accounting in my daily basis of life
120	Yes….. I do because we went at our own pace and when I would not understand Sasha was always there to help
121	The tutorials also focused on not just Accounting as a whole but in key aspects that would help to get greater understanding
122	Yes
123	Very much so
124	To an extent… I think the idea and the concepts are perfect to help students grasp and understand but should be simplified in a way as it can be confusing
125	I think if it was done in person at campus with Ms Sasha explaining it in detail it would have been much more effective

5. WHICH THRESHOLD CONCEPTS TUTORIALS DID YOU FIND CHALLENGING?

126	Tutorial 7 which involved the threshold concept of 'Redeemable Cumulative Preference Shares Repayable at a Specified Date vs Loan' the most challenging for me. Although I was able to learn from it.
127	Difficulty in understanding adjustments
128	Struggling with bank reconciliation statements
129	Difficulty in week 2 preparing profit
130	Calculations in accrual and cash basis
131	Difficulty in the overall format
132	Week 4 so far
133	Adjusting journal entries
134	Tutorial 1
135	Tutorial 2
136	Tutorial 3
137	Bank reconciliation
138	None. I wouldn't say it was straightforward but it was understandable
139	There were tricky questions, but I understood it clearly
140	Preparing a bank reconciliation was the most challenging task for me
141	Debits and credits were also mind boggling as it always confused me
142	Preparing a bank reconciliation as well as adjustments (accrued expense, income etc) were challenging, but once I read through the explanations, I found my mistakes quickly and rectified them
143	The Threshold Concepts Theory has been very effective and they helped me a lot but I find bank recon to be the most challenging one for me
144	I don't think I had a problem…. There were struggles here and there but ultimately I got through them
145	Troublesome
146	Transformative
147	Bank reconciliation
148	Most of them to be honest
149	Grasping the main idea of each concept can be challenging

6. HOW DID YOU FEEL WHEN LEARNING ACCOUNTING 101 THIS SEMESTER?

150	Being a student who has not done accounting before, I was unconfident and scared when it came to this subject.
151	Although overtime my understanding and knowledge in this subject started to build and so did my attitude towards wanting to do better in Accounting 101
152	Joyful
153	TC groups are amazing
154	Challenging
155	Worth it
156	Was fun
157	Really excited when my calculations balance
158	Honestly I felt like I'd fail if I didn't do my best
159	I felt like I should always be up to date
160	At first it was a little hard but it became easier with practice and I enjoyed it
161	It still gives me anxiety because I never know what to expect in tests and my marks
162	It's a subject I have never been ready for
163	I wish we had better tutors who actually can explain things
164	I wish the module was more uniform, and activities that were given could be marked and reviewed
165	I felt slightly challenged
166	I was motivated to work and attempt these tutorials
167	I feel more confident about Accounting
168	Excited
169	Curious about other aspects which are related to Acc
170	Learning Acc 101 was not as bad as I imagine it to be
171	I became more enthusiastic about accounting
172	The tutorial helped me to understand better and I picked up certain skills that I cannot forget
173	Overwhelmed
174	It can be daunting learning many concepts (which are already familiar to students around myself)
175	Accounting is not a subject to be rushed in order for students to grasp concepts, many exercises with thorough explanations should be given
176	It is indeed a very intimidating and challenging module
177	Relief…. There was no pressure to know everything
178	Stress free…. I got to go at my own pace so that was nice
179	I feel comfortable
180	Sometimes its challenging and leads to unnecessary anxiety
181	I felt much more comfortable and at ease than I originally anticipated
182	Hard due to self-studying because of the corona virus
183	It made a first-time accounting student find it much harder as self-tutoring a subject such as accounting 101 is hard without being taught

7. WHAT WAS YOUR PERCEPTION OF YOURSELF THROUGHOUT YOUR LEARNING OF ACCOUNTING 101 THIS SEMESTER?

184	Throughout learning Accounting 101 I went through numerous emotions.
185	When I started with accounting in the first few weeks, my perception was of me not seeing myself as being able to do well in this subject and I had a negative mindset
186	Although when I had started the Accounting 101 Tutorial program it really helped me turn my negative mindset into a positive one
187	My perception of myself in this subject changed to be knowing that I could understand and learn the concepts of Accounting 101 and also challenge myself.
188	Accomplishments
189	Intimidating module
190	Challenging module
191	Hardworking
192	Confident
193	Dedicated, as instead of watching Netflix I was learning through the threshold concepts
194	I saw myself in the bottom half of the whole Accounting class
195	I saw myself as a below average learner
196	I thought that I would be able to grasp the concepts and be able to learn it especially with no lectures, but the tutorial programme has helped a lot and made me more confident towards the module
197	Was hoping for improvement
198	Was hoping for an understanding of things I needed to change when studying for Accounting
199	I realised I am very pessimistic about this subject
200	The base knowledge I have gives me hope
201	I am slow in working
202	I tend to make careless mistakes often
203	I need to be more focused
204	I have developed a new and broader aspect about Acc
205	That accounting is not really hard. It is how you apply yourself to the question. I feel that I have developed this aspect
206	I feel I have grown in this subject compared to where I was initially
207	I have changed the perception of my own self and that makes me happy and overwhelmed
208	I grew in understanding because the scenario made it easier
209	There were up's and downs
210	I know that when I work at a topic enough I can understand it and do well
211	Then times when work is challenging leaves me fatigued, often times frustrated. But this is the learning process
212	My perception about Acct 101 was that it was an undoable module
213	I think I have grown mentally and I didn't worry or stress a lot and panic like I would usually do
214	I am also much more focused
215	I want to obtain good marks in Accounting
216	I was impressed at how quickly I grasped the concepts
217	That with a lecturer I would actually do well and grasp but due to this pandemic everything is going counter to my perceptions

8. CAN YOU DESCRIBE SPECIFIC ATTRIBUTES YOU HAVE ACQUIRED OR FINE-TUNED AS A RESULT OF YOUR PARTICIPATION IN THE THRESHOLD CONCEPTS INFUSED TUTORIAL PROGRAMME?

218	Become more confident
219	Have the ability to learn and tackle new concepts
220	Become more positive
221	It was fun working as a group
222	Increased my confidence
223	Tuts were encouraging
224	The tut helped my understand the examples in the book
225	Loved it
226	Time management
227	The ability to not snack until I have completed the task in front of me
228	Sacrifice over everything will lead to success
229	Besides actually learning the concepts I think the TC programme has actually programmed (no pun intended) my brain to always think of TC characteristics that a concept possesses every time I come across a new concept in accounting
230	Adaptable
231	Productive
232	Patient
233	Motivated
234	Not quite sure, but I feel more motivated
235	It has a refreshing vigour
236	I am more focused
237	I am harder working
238	I am much more confident
239	I think I have fine-tuned myself by not rushing each question and not making stupid mistakes
240	Not overthinking
241	I have become more enthusiastic
242	It brought me to an optimistic experience
243	I have a greater picture of what's going on
244	I am more positive
245	Perseverance
246	Confidence
247	For me I think I don't get overwhelmed with the questions and information because I used to overthink everything and confuse myself but now don't get confused
248	My ability to understand…..my understanding has improved too
249	Specific concepts or key words of every chapter we have did
250	The way of answering Accounting questions
251	Patience and kindness
252	I feel my learning style has improved
253	It helped with my confidence when approaching the module
254	Grasping the focal points of the threshold concepts were hard but certain concepts did being clarity to understanding the basics is fundamental for grasping accounting as a whole
255	I have become more focused and enthusiastic
256	It brought me to an optimistic experience
257	I have a greater picture of what's going on

Annexure 10: Adapted Simple ART Tables

ANALYSIS OF EACH PAIR OF AFFINITY RELATIONSHIPS (FOCUS GROUP)

Number	Group
1.	Learning Experiences
2.	Adopting a Holistic Approach to Learning
3.	Various Learning Outcomes
4.	Demystified Threshold Concepts Infused Materials
5.	Learning Challenges
6.	Emotional Responses
7.	Perceptions
8.	Learning Attributes

1	←	2
1	→	3
1	←	4
1	→	5
1	←	6
1	-	7
1	→	8

2	→	1
2	→	3
2	→	4
2	←	5
2	←	6
2	←	7
2	→	8

3	←	1
3	←	2
3	←	4
3	←	5
3	→	6
3	→	7
3	→	8

4	→	1
4	←	2
4	→	3
4	←	5
4	→	6
4	→	7
4	→	8

5	→	1
5	→	2
5	→	3
5	→	4
5	→	6
5	←	7
5	→	8

6	←	1
6	→	2
6	←	3
6	←	4
6	←	5
6	←	7
6	←	8

7	←	1
7	→	2
7	→	3
7	←	4
7	←	5
7	←	6
7	←	8

8	←	1
8	←	2
8	→	3
8	→	4
8	→	5
8	→	6
8	→	7

Annexure 11: Individual Detailed ART Tables

NAME:

INDIVIDUAL ANALYSIS OF EACH PAIR OF THEMES

THEMES

1. Learning Experiences
2. Adopting A Holistic Approach To Learning
3. Learning Outcomes
4. Demystifying Threshold Concepts Infused Materials
5. Learning Challenges
6. Emotional Responses
7. Self-Perceptions
8. Learning Attributes

MEANINGS OF THE ARROWS AND DASH

→	=	eg. 1 → 2	=	1 influences 2
←	=	eg. 1 ← 2	=	2 influences 1
–	=	eg. 1 – 2	=	No relationship between 1 and 2

Relationship			Example of the relationship in natural language or 'if, then' statement
1		2	
1		3	
1		4	
1		5	
1		6	
1		7	
1		8	
Relationship			Example of the relationship in natural language or 'if, then' statement
2		1	
2		3	
2		4	
2		5	
2		6	
2		7	
2		8	
Relationship			Example of the relationship in natural language or 'if, then' statement
3		1	
3		2	
3		4	
3		5	
3		6	
3		7	
3		8	
Relationship			Example of the relationship in natural language or 'if, then' statement
4		1	
4		2	
4		3	
4		5	
4		6	
4		7	
4		8	

Relationship			Example of the relationship in natural language or 'if, then' statement
5		1	
5		2	
5		3	
5		4	
5		6	
5		7	
5		8	
Relationship			Example of the relationship in natural language or 'if, then' statement
6		1	
6		2	
6		3	
6		4	
6		5	
6		7	
6		8	
Relationship			Example of the relationship in natural language or 'if, then' statement
7		1	
7		2	
7		3	
7		4	
7		5	
7		6	
7		8	
Relationship			Example of the relationship in natural language or 'if, then' statement
8		1	
8		2	
8		3	
8		4	
8		5	
8		6	
8		7	

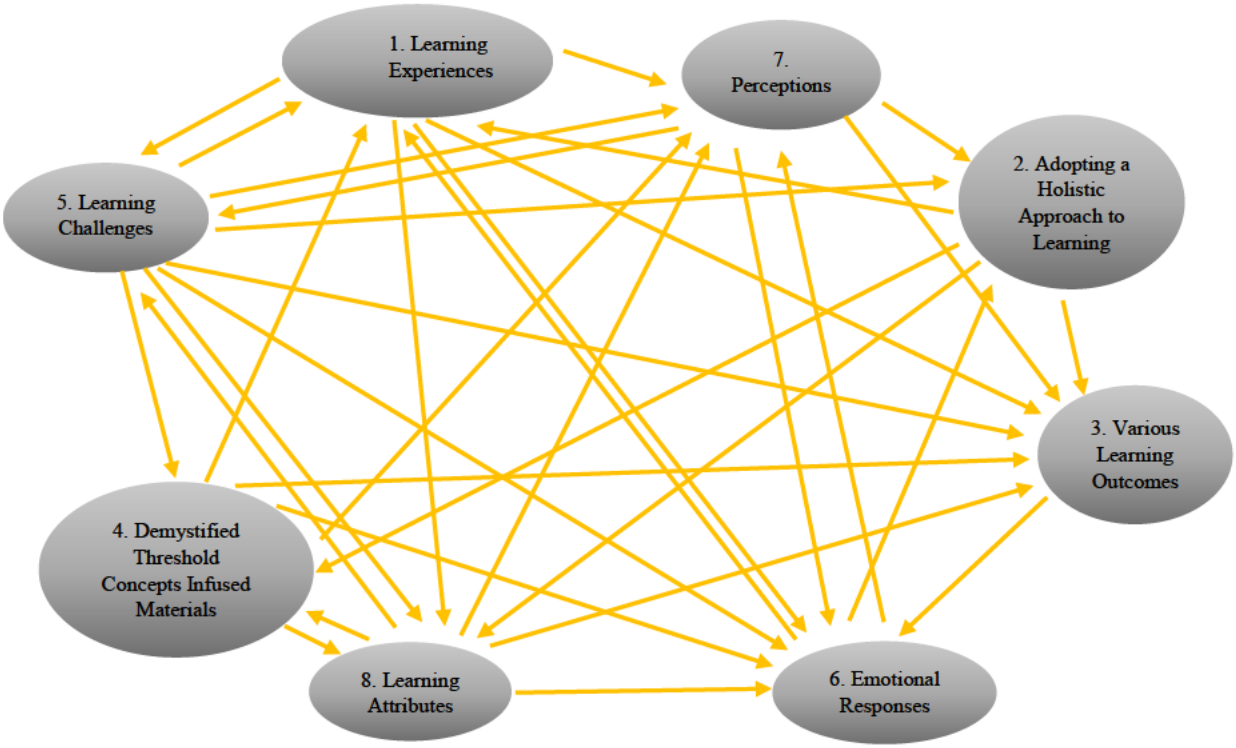
Annexure 12: Adapted Simple ART Tabular IRD

	1	2	3	4	5	6	7	8	Out ↑	In ←	Δ
1		←	↑	←	↑	↑	↑	↑	5	2	3
2	↑		↑	↑	←	←	←	↑	4	3	1
3	←	←		←	←	↑	←	←	1	6	-5
4	↑	←	↑		←	↑	↑	↑	5	2	3
5	↑	↑	↑	↑		↑	↑	↑	7	0	7
6	↑	↑	←	←	←		↑	←	3	4	-1
7	-	↑	↑		↑	↑		←	4	2	2
8	←	←	↑	↑	↑	↑	↑		5	2	3

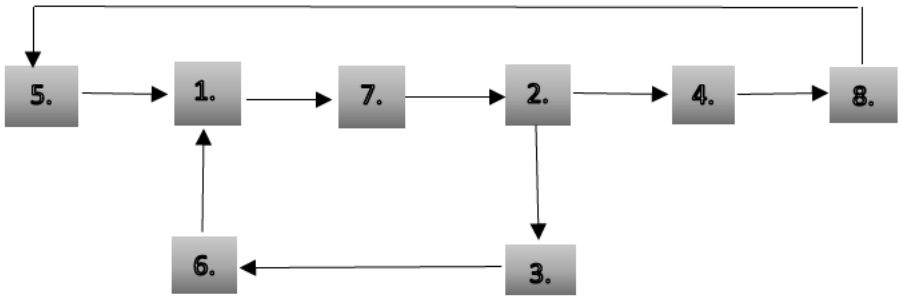
Annexure 13: Adapted Simple ART Tabular IRD: Sorted in Descending Order Of Δ

	1	2	3	4	5	6	7	8	Out ↑	In ←	Δ
5	↑	↑	↑	↑		↑	↑	↑	7	0	7
1		←	↑	←	↑	↑	↑	↑	5	2	3
4	↑	←	↑		←	↑	↑	↑	5	2	3
8	←	←	↑	↑	↑	↑	↑		5	2	3
7	-	↑	↑	←	↑	↑		←	4	2	2
2	↑		↑	↑	←	←	←	↑	4	3	1
6	↑	↑	←	←	←		↑	←	3	4	-1
3	←	←		←	←	↑	←	←	1	6	-5

Annexure 14: Adapted Simple ART Cluttered SID



Annexure 15: Adapted Simple ART Uncluttered SID



Annexure 16: Adapted Simple ART Telephoto View SID

(5 – 1 – 7 – 2 – 4 – 8 – 5) – (1 – 7 – 2 – 3 – 6 – 1)

Annexure 17: Composite Individual Detailed ART Table

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	
1	→	←	←	←	←	←	>	<	←	<	←	←	←	←	<	↤	2
1	→	←	←	←	→	→	>	>	→	-	←	→	→	→	<	↦	3
1	←	→	←	←	→	←	>	<	←	<	←	←	←	←	<	↤	4
1	←	→	←	←	←	←	<	<	←	>	←	←	←	←	<	↤	5
1	→	→	→	←	←	→	-	>	→	-	←	←	→	→	<	↦	6
1	→	→	→	←	→	→	>	>	←	<	→	–	→	→	>	↦	7
1	→	←	→	←	→	→	<	<	←	<	←	→	→	→	→	↦	8
2	←	→	→	→	→	→	<	>	→	>	→	→	→	→	>	↦	1
2	→	→	→	→	→	→	>	>	→	>	→	→	→	→	>	↦	3
2	←	→	→	→	→	→	>	>	→	<	→	←	→	→	>	↤	4
2	←	→	→	→	-	→	<	>	→	>	←	←	←	→	>	↦	5
2	–	←	→	→	-	→	>	>	→	-	→	←	←	→	>	↤	6
2	←	→	→	→	←	→	<	>	→	-	→	←	→	→	>	↤	7
2	→	→	→	←	-	→	<	<	→	>	→	←	→	→	<	↦	8
3	←	→	→	→	←	←	<	<	←	-	→	←	←	←	>	↤	1
3	←	←	←	←	←	←	<	<	←	<	←	→	←	←	<	↤	2
3	←	←	←	←	←	→	-	>	←	<	—	←	←	←	<	↤	4
3	←	←	←	←	←	←	<	<	←	-	←	–	←	←	<	↤	5
3	→	–	→	←	→	←	<	>	→	-	→	→	→	→	<	↦	6
3	→	←	→	←	→	→	<	>	←	<	→	→	←	←	<	↤	7
3	→	←	→	←	→	→	<	>	←	-	→	→	←	→	>	↦	8
4	→	←	→	→	←	→	>	>	→	>	→	→	→	→	>	↦	1
4	→	←	←	←	←	→	>	<	←	>	←	→	←	←	<	↦	2
4	→	→	→	→	→	→	_	<	→	>	—	→	→	→	>	↦	3
4	→	←	←	←	→	→	_	<	→	>	→	→	←	←	>	↤	5
4	→	←	→	←	→	→	_	<	→	-	→	→	→	→	<	↤	6
4	→	→	→	←	→	→	<	<	→	<	→	←	←	→	>	↦	7
4	→	→	→	←	←	→	_	<	→	-	←	→	→	→	>	↦	8
5	→	←	→	→	→	←	>	>	→	>	→	→	→	→	>	↦	1
5	→	←	←	←	-	←	>	<	←	<	→	→	→	←	<	↤	2
5	→	→	→	→	→	→	>	>	→	-	→	–	→	→	>	↦	3
5	←	→	→	→	←	←	_	>	←	<	←	←	→	→	<	↦	4
5	→	←	→	←	→	→	>	>	→	>	→	→	→	→	<	↦	6
5	→	←	→	←	→	→	>	>	→	-	→	→	→	→	<	↦	7
5	→	←	→	←	→	→	>	>	→	<	—	→	→	→	>	↦	8
6	←	←	←	→	→	→	>	<	←	-	→	→	←	←	>	↤	1
6	–	→	←	←	-	→	<	<	←	-	←	→	→	←	<	↤	2
6	←	–	←	→	←	→	>	<	←	-	←	←	←	←	>	↤	3
6	←	→	←	→	←	→	_	>	←	-	←	←	←	←	>	↦	4
6	←	→	←	→	←	→	<	<	←	<	←	←	←	←	>	↤	5
6	←	→	→	→	←	→	<	<	←	-	→	→	←	→	>	↦	7
6	←	→	→	←	-	→	<	<	←	-	←	–	←	→	<	↤	8

7	←	←	←	→	←	←	<	<	→	>	←	–	→	←	<	↤	1
7	→	←	←	←	→	←	>	<	←	-	←	→	←	←	<	↦	2
7	←	→	←	→	←	←	>	<	→	>	←	←	→	→	>	↦	3
7	←	←	←	→	←	←	>	>	←	>	←	→	←	←	<	↤	4
7	←	→	←	→	←	←	<	<	←	-	←	←	←	←	>	↤	5
7	→	←	←	←	→	→	>	>	→	-	←	←	→	←	<	↤	6
7	←	→	→	←	-	→	<	<	→	>	←	–	→	←	<	↤	8
8	←	→	←	→	←	←	>	>	→	>	→	←	←	←	<	↤	1
8	←	←	←	→	-	←	>	>	←	<	←	→	←	←	>	↤	2
8	←	→	←	→	←	←	>	<	→	-	←	←	→	←	<	↤	3
8	←	←	←	→	→	←	_	>	←	-	→	←	←	←	<	↤	4
8	←	→	←	→	←	←	<	<	←	>	—	←	←	←	<	↤	5
8	→	←	←	→	-	→	>	>	→	-	→	–	→	←	>	↦	6
8	→	←	→	→	-	←	>	>	←	<	→	–	←	→	>	↦	7

Annexure 18: Interview Questions: Phase 2 of Interactive Qualitative Analysis (IQA)

INTERVIEW QUESTIONS: Phase 2 of Interactive Qualitative Analysis (IQA)

General Questions

1. The original plan was to complete a tutorial weekly at a set time for a set 2 periods on campus with a group of 20 individuals at different paces. However, you instead completed tutorials at your own pace at home over WhatsApp Messenger. What were the advantages and disadvantages of learning Accounting 101 in this set up while university activities were on hold, knowing that you would eventually have to catch up with normal activities in this lockdown?
2. How did the lockdown affect you emotionally with regards to your studying?
3. How did you keep motivated to study during this programme?
4. When was the best time for you to study?
5. Did you have access to sufficient data and network?
6. Did you have access to a device to help you study eg. Laptop?
7. Did you have an environment that you could accommodate you while studying?
8. Did you find this type of learning environment I conducted with you a productive one?
9. What do you feel is the purpose of Accounting 101 in your degree?
10. Please redo the Myers-Briggs Type Indicator.

The second phase of the IQA research methodology involves a two-phase interview session. During Phase One of the interview session, the axial interview, the researcher will generate a deep and detailed description of each affinity identified in Phase One of the IQA process. The content of the interview is therefore based on the affinities identified in the focus group session. During the second phase of the interview session, the theoretical interview, the researcher will ask the participant to identify any potential relationships that exist between the affinities and will therefore be able to generate mind map of the phenomenon of learning for the participant.

Phase 1: Axial Interview Questions

1. Let us look at each affinity generated in the focus group session and can you tell me what your experiences with each one is?

Phase 2: Theoretical Interview Questions

1. Some of the themes generated in the focus group session have a relationship. Tell me which themes you have identified as having a relationship with another theme.
2. In each relationship, one theme causes the other. Give me an example of your learning experience in Accounting 101 with each causal relationship you have identified.

Annexure 19: Course Outline: Accounting 101 - 2020

UNIVERSITY OF
KWAZULU-NATAL

College of Law and Management Studies

School of Accounting, Economics and Finance

STUDENT GUIDE

ACCOUNTING 101 – 2020

WESTVILLE CAMPUS

and

PIETERMARITZBURG CAMPUS

This document serves as the rules and general guide to the module.
It contains the rules and guidelines of the University of KwaZulu-Natal - Accounting 101 Module.
Students are required to thoroughly familiarise themselves with its contents.

CONTENTS	Page

1. OBJECTIVES AND SCOPE OF MODULE

The main objective of this module is to introduce students to the fundamental concepts and techniques of accounting which will provide:

- a foundation for advanced study in the special field of Accountancy, and
- a knowledge of basic accounting procedures and techniques to equip students who wish to pursue careers in other fields of business.

On completion of this module students should be able to:

- Discuss the role of accounting in business and understand the framework of accounting.
- Understand the accounting equation and analyse transactions in terms of this.
- Prepare accounting entries and financial statements for different forms of entities in a manner appropriate to the entity.
- To critically evaluate and analyse information provided in the financial statements.

2. YOUR ACADEMIC OBLIGATION TO THE MODULE

In order to gain the credit for Accounting 101 a student must meet certain minimum criteria in order to satisfy the prescribed D.P. requirements and to make a personal commitment.
These are summarised below:

- Administrative requirement:
  - You must be correctly registered with the College for Accounting 101.
  - Complete the internal registration form for Accounting 101 and hand this to module administrator
- 'Duly Performed' Requirements:
  - Achieve a semester class mark of at least 40%.
- Communication Requirements:
  - **Students are expected to be familiar at all times with all Accounting 101 notices as displayed on the appropriate notice boards and LEARN.**
  - Students are deemed to be present, and on time, at all lectures and are deemed to be familiar with all verbal announcements made from time to time at lectures.
- Study Requirements:
  - You are expected to keep up to date with your studies.
  - All students must be in possession of the correct edition of the prescribed textbook.
  - You are expected to spend at least 5 hours per week on private study.
  - You are expected to attend all lectures.
  - You are expected to attend tutorial meetings, with a written attempt at the prescribed questions.
  - It is your responsibility to make sure that you have copies of all documentation.
  - You are expected to make adequate preparation for the mid-term progress test; the group project and for the Final Examination.

3. COMMUNICATION WITH THE ACCOUNTING STAFF

Notice boards are situated outside the School of Accounting, Economics and Finance located on the 1st floor of J Block **(WV), Development Notice Board (HC**) and outside the C3 lecture room **(PMB)**.

Students are *deemed* to be present at all tutorials and lectures and are *required* to study the notice board & their UKZN email inbox every day. It is assumed that all students receive all announcements, written or verbal.

The Accounting 101 academic staff on the **Westville campus** are:

- Dr Msizi Mkhize
  J Block, 2nd Floor, Room J02-012
  Tel: (031) 260 2141
  Email: mkhizem4@ukzn.ac.za

- Mr Leo Deodutt
  J Block, 2nd Floor, Room J02-032
  Tel: (031) 260 7074
  Email: deoduttj@ukzn.ac.za

- Dr. Mishelle Doorasamy
  J Block, 2nd Floor, Room J02-028
  Tel: (031) 260 2155
  Email: doorasamym@ukzn.ac.za

- Mr Bheki Nxumalo
  J Block, 2nd Floor, Westville campus, Room J02-034
  Tel: (031) 260 8394
  Email: nxumalobh@ukzn.ac.za

- Academic Development Officers – Accounting
  TBA
  J Block, 2nd Floor

The Accounting 101 administrative staff on the Westville campus is:

- Mrs Raylynn Jasmin
  (J Block, 2nd Floor, Room J02-042)
  Tel: (031) 260 7002
  Email: jasmin@ukzn.ac.za

The Accounting 101 academic staff on the **Pietermaritzburg campus** is:

- Mr Shane Rathnasamy **(Module Coordinator)**
  Commerce Building, 1st Floor, Room 6
  Tel: (033) 260 6309
  Email: RathnasamyS@ukzn.ac.za

- Academic Development Officer - Accounting
  TBA
  Commerce Building, Basement Room B7.

The Accounting 101 administrative staff on the Pietermaritzburg campus is:

- Ms. Nozipho Ntuli
  Commerce Building, Ground Floor (G8)
  Tel: (031) 260 5392
  Email: Ntulin2@ukzn.ac.za

4. TEACHING METHOD

The 2020 Accounting 101 Semester consists of:

- Approximately 52 lectures;
- 8 tutorial meetings;
- Concept tests;
- 1 Tests of 90 minutes (1.5 Hours) and 1 project
- One 3-hour Examination in May/June 2020.

5. LECTURES

- The timetable provides for 4 lectures per week in Accounting 101 (one double and two single period lectures).
- The lectures will follow the prescribed text book:
  - **'Financial Accounting An Introduction. REVISED 5th Edition 2019, by Jacqui Kew and Alex Watson'**

  Students are required to have a copy of the text book at every lecture and tutorial.
- Lectures are designed to introduce the subject matter, to highlight problem areas and to add value to the prescribed text.
- Each lecture builds on the previous lecture and therefore attendance is crucial for a thorough understanding of the concepts taught. Refer to the timetable in this handout.
- Any changes to the lecture programme caused by public/religious holidays will be announced in class and displayed on the notice board.

6. TUTORIALS

Tutorials clarify and consolidate the concepts covered in lectures. A pass in Accounting 101 is achieved through steady, thorough tutorial work rather than any other factor in the module. Exercises and problems are set each week for you to complete at home. Your tutor will keep a record of your attendance. Suggested solutions will be provided on LEARN each week. It is absolutely imperative that you attempt to do the exercises and problems before you study the solutions.

Only registered students will be assigned to tutorial groups in the first week of lectures. Lists of the final assigned groups will be posted on LEARN and Notice board. **You may not change groups after this allocation has taken place.** Please understand that there are a large number of students on the module and changing of tutorial groups results in uneven numbers and makes the administration of tutorial registers a difficult task. Students that are not registered but intend doing so, kindly contact the module administrator to allocate you to a tutorial group.

You are to attend one double period tutorial per week. Please note that students are urged to attend **all** tutorials.

Note: Students will be required to attempt unseen tutorial questions during these sessions.

- The tutorials are the most important part of Accounting 101.
- You cannot learn Accounting merely by attending lectures or by reading the prescribed text books – practice exercises are essential!
- Tutorials (one double lecture period per student per week) are held under the supervision of a tutor.
- Tutorial exercises are selected from the prescribed question book.
- It is recommended that a student should attend all tutorials with prepared homework to be able to actively participate.
- An attendance register will be kept at all tutorials. **You need to be present for the entire double period tutorial and have actively participated to be marked present.**
- Tutorial solutions will be put onto LEARN every week - the onus is on the student to print a copy of the solution.
- The Role of the Tutor is:
  - to help students identify Accounting problems and to assist in solving these;
  - to be available to students to discuss problems that may be experienced in the module;

- to provide feedback to the lecturers of any significant difficulties experienced by the students.
- Note:
  - Tutors are not expected to give lectures at tutorials.
  - Tutors will not be expected to assist students who have not made a serious effort at the problem in question.

- Students are to prepare their solutions in advance.
- The 'unseen' tutorial question:
  - At each tutorial meeting one exercise (the 'unseen' question) will be selected. This 'unseen' question will be done by the students in the tutorial and discussed in groups.
- Tutors will be available for the entire tutorial to assist students needing help.

Westville Campus

Day	Periods
Tuesday	8 + 9 (R1)
Tuesday	10 + 11 (R1)
Thursday	8 + 9 (R3)
Friday	8 + 9 (R2)

Pietermaritzburg Campus

Day	Periods
Monday	8 + 9
Monday	10 + 11

7. CONCEPT TESTS

Concept tests are short tests that test concepts learnt in lectures and will be done online on LEARN. Tests need to be completed after each section. The test will be available the Monday after the section has been completed and will be available to complete up until that Friday (refer to lecture schedule on page 9). Should the test not be attempted on time, a student will be awarded zero. The average mark of all tests will count 10% towards the class mark.

8. PRESCRIBED TEXTS

- **Financial Accounting An Introduction. REVISED 5th Edition 2019, by Jacqui Kew and Alex Watson**

- **Financial Accounting. The Question Book. REVISED 5th Edition 2019, by Jacqui Kew and Riley Carpenter.**

  NOTE: Students are advised against purchasing earlier editions of these texts as the content has changed significantly. Tutorial questions will only be taken from the editions mentioned above. Purchasing a bundle of both textbooks together is more economical.

8.1 RECOMMENDED TEXTS

- Introduction to Financial Accounting, A Dempsey, PM Britz, JA Joubert, and SA Watson, 9th Edition (2016), Lexis Nexis (Pty) Ltd

- Accounting – An introduction, JE Myburgh, JP Fouche, M Cloete, ZL Mitchell, AS Stander, and S Swart, 12th Edition (2016), Lexis Nexis (Pty) Ltd

- A Concepts-Based Introduction to Financial Accounting, DL Kolitz, 5th Edition (2015), JUTA & Co (Pty) Ltd

9. DULY PERFORMED CERTIFICATES (D.P.)

Every student must achieve a Duly Performed certificate in each module before the examination may be written. The requirements for this module are:

1. Obtain a class mark of at least **40% for the semester**. Refer to section 10 for calculation.

NOTE WELL: Students found copying another person's work, or allowing their own to be copied, will be brought before the University Discipline court, which regards this as a serious offence.

10. SEMESTER MARK

- A minimum of 50% is required to pass Accounting 101 and proceed into Accounting 102. There is no pre-requisite for Accounting 103
- As a general rule, subject to the alternatives given below, the final promotion mark for Accounting 101 will be made up in the ratio:

Class Mark (Test 30%; Group Project 10%; Concept tests 5%; Completed Tutorial Attendance 5%)	**Final Examination**
50%	50%

- There is one test only during the semester. Students must write the prescribed test, which counts 60% towards the class mark.
- Students who have been assessed to have a valid reason for missing the prescribed test will be permitted to write an aegrotat in order to make up the marks for the class mark (This applies to the **Test Mark only**). There is no second aegrotat test. Please note that the aegrotat test will examine the entire semesters content and limited to that which was assessed in the prescribed test only.

11. MODULE ASSESSMENT

- Test and Examinations will be written on the following dates:

Test	Dates	Time
Group Project **(DUE DATE FOR SUBMISSION)**	Friday, 03 April 2020	To be submitted by no later than 16:00 (4pm) to the respective campus administrative officers. **No** late submissions will be accepted and students who fail to meet this deadline will receive a mark of 0% for the project.
Test	Wednesday, 15 April 2020	17:30 – 19:30
Aegrotat	Wednesday, 29 April 2020	11:15 – 13:15

- Final Examination date: to be advised by the university communication.
- A suggested solution will be made available to students after the tests.
- The main examination will be written in May/June
- The Supplementary Examination:
  - The Supplementary Examination for Accounting 101 will be written soon after the examination.
  - The Class Mark **will** be incorporated in the calculation of the Supplementary Examination final mark.
  - The Supplementary Examination will be the last assessment of Accounting 101 for the 2020 academic period – there will be no 'Supplementary Examination' for the Supplementary Examination.
  - Please note that no solution shall be provided for the supplementary examination and all question papers are to be handed in at the examination venue.

12. AEGROTATS

Students missing a test for legitimate reasons must apply to write an aegrotat test. The completed prescribed form, with necessary supporting documentation, must be handed in to the nominated course administrator, no later than five days from the said date of the prescribed test (please refer to point 10 above). Please note that no solution shall be provided for the aegrotat test and all question papers are to be handed in at the test venue.

13. PROCEED RULES

A sub-minimum of 50% in Accounting 101 is required to proceed to Accounting 102.There is no pre-requisite to register for Accounting 103
A sub-minimum of 50% in both Accounting 101 and 102 is required to proceed to Accounting 200.

14. LEARN

Website address: http://learn.ukzn.ac.za
Please use your UKZN Novell LAN username and password. LEARN uses the same account information so if you can login to a UKZN computer you can login to LEARN. If you don't have a LAN password please ask for one at ICT Student Help desk.

Should you have any problems logging in, do the following:
Please contact the ICT Student Help Desk**: ext 4000 or 031 260 4000**

Select the module Financial Accounting 101 once you have logged in successfully.
Should you have any problems obtaining information from this site, please see the module administrator; **Mrs Raylynn Jasmin (WV Campus J Block, 2nd Floor and Room J02-042) or Ms. Nozipho Ntuli (PMB Campus Commerce Building, Ground Floor)** to ensure that you do have access to the site. Please note that the information will only be placed on the site when authorised by the lecturer.

Please note that all concept tests, lecture notes, tutorial information and other vital course information will be placed on LEARN. It is therefore recommended that LEARN be checked daily for any updated course information.

15. GENERAL

- The large class groups at the university make it difficult for the lecturers to monitor the progress of each individual student. While the tutorial system assists in this regard, students are expected to monitor their own progress.
- Some students need to work harder than others do in order to reach the required level of competence – certain study habits suit some students better than others.
- It is important that you keep up to date with the module.
- Students must supplement the lectures and tutorials with private study.
- You will find that most of your learning takes place during your private study that includes reading, preparation of tutorials and having work/discussion sessions with your friends.
- A study of Accounting involves the solving of problems. The more practice exercises you do the more equipped you will be to cope with the tests and examination.
- It is emphasised that in order to study Accounting effectively the student needs to do a great deal of practice exercises. You cannot learn the subject by simply attending lectures.
- The module is planned that the average student will need approximately 15 hours per week:

4 lectures (approximate hours)	3
1 Tutorial	2
Private study, including tutorial preparation	10
Total hours per week (on average)	**15**

- **ACADEMIC AND OTHER SUPPORT**

  Please make use of the support services available to you as a UKZN student and Finance student specifically.
  For personal counselling enquiries, appointments and directions, contact Pam Perumal on 031-260 7337 or perumala@ukzn.ac.za.
  For assistance with a disability, contact Faaiza Shaikh on 031-260 7706/7888 or shaikhf@ukzn.ac.za.
  For additional support and assistance with your Finance studies, see the Finance ADO, Mr Hilary Muguto, in office number 361, 3rd Floor of J Block. He will be available during consultation times as posted on his door.

2020 TIMETABLE (Accounting 101) WESTVILLE CAMPUS

Period	Time	Monday	Tuesday	Wednesday	Thursday	Friday
1	7:45 – 8:30			R2 LECTURE (T3)		
2	8:40 – 9:25			R3 LECTURE (T3)		R1 LECTURE (T1)
3	9:35 – 10:20					
4	10:30 – 11:15	R3 LECTURE (T3)	R2 LECTURE (T3)		R1 LECTURE (T1)	
5	11:25 – 12:10	R3 LECTURE (T3)	R2 LECTURE (T3)		R1 LECTURE (T1)	
6	12:20 – 1:05					
7	1:15 – 2:00			R1 LECTURE (T1)	R3 LECTURE (T3)	R2 LECTURE (T3)
8	2:10 – 2:55		R1 TUTS		R3 TUTS	R2 TUTS
9	3:05 – 4:00		R1 TUTS		R3 TUTS	R2 TUTS
10	4:00 - 4:45		R1 TUTS			
11	4:45 – 5:30		R1 TUTS			

2020 TIMETABLE (Accounting 101) PIETERMARITZBURG CAMPUS

Period	Time	Monday	Tuesday	Wednesday	Thursday	Friday
1	7:45 – 8:30					R1 LECTURE (C12)
2	8:40 – 9:25				R1 LECTURE (C12)	
3	9:35 – 10:20				R1 LECTURE (C12)	
4	10:30 – 11:15				R2 LECTURE (C12)	
5	11:25 – 12:10				R2 LECTURE (C12)	
6	12:20 – 1:05		R1 LECTURE (C12)			
7	1:15 – 2:00					
8	2:10 – 2:55	TUTORIALS 1				
9	3:05 – 4:00	TUTORIALS 1	R2 LECTURE (C12)			
10	4:00 - 4:45	TUTORIALS 2	R2 LECTURE (C12)			
11	4:45 – 5:30	TUTORIALS 2				

Accounting 101 (2020)
Study and Tutorial Programme
*This is a guide and is subject to changes on a regular basis. All changes will be announced in class and on Moodle.

Week No.	TOPIC	Tutorial Number	Reference	Concept Tests (refer to subheading 7.)
1	ACCOUNTING IN CONTEXT. THE PURPOSE OF ACOUNTING.		CH 1 CH 2	
2	THE PRACTICE OF ACCOUNTING GENERAL LEDGER	1	CH 3	
3	THE PRACTICE OF ACCOUNTING – SUBSIDIARY JOURNALS, LEDGERS AND TRIAL BALANCE	1,2	CH 3	
4	ADJUSTMENTS	2,3	CH 5	
5	ADJUSTMENTS & VALUE ADDED TAX (VAT)	3	CH 5 CH 7	
6	BANK RECONCILIATION STATEMENTS	4	CH 8	
7	INTRODUCING CREDIT: TRADE PAYABLES	5	CH 9	
8	TRADE RECEIVABLES AND WORKING CAPITAL MANAGEMENT	6	CH 10	
9	PARTNERSHIPS **(PROJECT DUE DATE: 3 April 2020)**	7	CH 13	
10	COMPANIES **TEST : Wednesday, 15 April 2020** *(Tuesday 14/4 follows a Monday Timetable and Wednesday 15/04 follows a Friday Timetable)*	8	CH 12	
11	COMPANIES	8	CH 12	
12	COMPANIES **AEGROTAT: Wednesday, 29 April 2020**	8	CH 16	
13	NON-PROFIT ORGANISATIONS	8	CH 16	
	Wednesday, 13 May Lectures end *Thursday, 14 May – Monday, 18 May Study period*			

***This tutorial schedule is prepared as a guideline and is subject to changes due to unforeseen circumstances beyond the module facilitators' control. All changes to tutorials will be announced in class and on Moodle in advance, time permitting.**

Tutorial schedule: 2020

Tut No.	Week begin, Monday (Due dates)	Tutorial Numbers
1	24 Feb	**TUT 1** **Practice :** 2.1 (A), 2.4 (B), 3.1 (B), 3.2 (B) **Homework Questions:** 2.5 (B), 2.6 (C), 2.3 (B), 3.3 (B), 3.4 (C) **Unseen:** 3.5 (C)
2	2 March	**TUT 2** **Practice Questions:** 3.6 (B) 5.1 (A) **Homework questions:** 3.7 (B) **Unseen:** 5.2 (C)
3	9 March	**TUT 3** **Practice Questions:** 5.3 (C), 7.1(A), 7.2(B) **Homework questions:** 5.4 (b), 7.3 (B) **Unseen:** 7.7 (B)
4	16 March	**TUT 4** **Practice Questions:** 8.1 (c), **Homework questions:** 8.2 (c), 8.8 (C) **Unseen:** 8.5 (A)
5	23 March	**TUT 5** **Homework question:** 9.1 (B) 9.2 (A) **Unseen**: 9.3 (B)
6	30 March	**TUT 6** **Homework questions:** 10.1 (B) 10.2 (B) **Unseen:**, 10.3 (B) *(PROJECT DUE DATE: 3 April 2020)*
	06 April	**NO TUTORIAL – EASTER VACATION**
	13 April	**NO TUTORIAL. TEST – WEDNESDAY 15 APRIL 2020**
7	20 April	**TUT 7** **Homework questions:** 13.1(A) 13.2 (C), 13.4 (C) **Unseen:** 13.3 (C)
	27 April	**NO TUTORIALS.** *(AEGROTAT TEST) – Wednesday 29 April 2020*
8	04 May	**TUT 8** **Homework Questions:** 12.2 (B), 12.3 (B), 12.4 (C), 12.7 (B) 16.1 (c), 16.2 (B) **Unseen:** 12.6 (A)
	11 May	**NO TUTORIAL.** *Wednesday, 13 May Lectures end* *Thursday, 14 May – Monday, 18 May Study period*

FINANCIAL ACCOUNTING 101 - 2020
DP ACKOWLEDGEMENT FORM

The Duly Performance (DP) requirements and method of assessment for Financial Accounting 101 are as follows:

DP Requirement:	**A class mark of 40%**
Class (semester) mark:	30 % Test, 10% Group Project, 5% concept test, 5% Completed Tutorial Attendance
Final result:	Assessed as: Class mark (50%) + Examination result (50%)
Pass proceed:	A final result of 50% is a pass and gains entry to Accounting 102. No pre-requisite to register for Accounting 103

I understand and accept that there is only one supplementary or aegrotat test offered during the semester. This aegrotat must be applied for through the School of Accounting, Economics and Finance (***not*** through the College). It is not guaranteed that this aegrotat will be granted. The School of Accounting, Economics and Finance reserves the right to have the Medical School assess the applications and supporting doctors' certificates. Please consult your module outline for the conditions under which application may be made and the application rules.

I hereby acknowledge that I have read, understood and accepted the DP requirements and the method of calculation of my class mark and final result as described above. Further to this, I agree to abide by the regulations stipulated in the attached module outline. I further acknowledge that I will not receive any further warning on these DP requirements and accept that should I not obtain a DP certificate, I will be **barred from sitting the final examination**.

PLEASE COMPLETE THIS ELECTRONIC FORM *IMMEDIATELY*

CLICK ON THIS LINK OR COPY AND PASTE TO YOUR BROWSER TO COMPLETE:

https://forms.office.com/Pages/ResponsePage.aspx?id=1idoltCpDUeMFbFGsBktUbutbPW24uhMs13LqhqNiL1UOFdFQTdLNExQMDZET01QUEFaQUxMT1REWi4u

Annexure 20: Copyright Request

From: Rendra Phalad

To: Sasha Padayachi

Subject: RE: PhD Application

Date: Friday, 24 July 2020 08:20:49

Attachments: image001.png

Dear Sasha. Approved

Mr Randy Phalad
Contracts Management and Copyright Consultant
Registrar
Legal Services

University of KwaZulu-Natal, Durban, 4041
Campus: Westville
Email: Phaladr@ukzn.ac.za
Website: www.ukzn.ac.za
Tel: 0312607455
Cell: 0833279846

From: Sasha Padayachi

Sent: Thursday, 23 July 2020 20:59

To: Rendra Phalad <Phaladr@ukzn.ac.za>

Subject: PhD Application

Dear Randy

I hope this email finds you well.

Please find attached my PhD request.

Thank you
Kind regards
Sasha

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

APPLICATION FOR A BLANKET LICENCE FOR THE REPRTINTING/ COPYING OF A PUBLICATION FOR EDUCATIONAL PURPOSES

PERMISSION IS REQUESTED TO REPRODUCE THE MATERIAL LISTED BELOW:

DATE OF APPLICATION	23 July 2020

PLEASE PRINT AND COMPLETE IN FULL

1. DETAILS OF APPLICANT:

a) Name of Staff Member/ Division: SASHA PADAYACHI

b) Tel. ext: 7436 Email: Padayachis@ukzn.ac.za

c) Discipline/School: ACCOUNTING, ECONOMICS & FINANCE (I AM STUDYING VIA THE SCHOOL OF EDUCATION) Course code: ACCT101

d) Campus

Edgewood	Howard	Medical	PMB	Westville X

2. BIBLIOGRAPHIC DETAILS

a) Author/s: JACQUI KEW & ALEX WATSON

b) Full Title of Book/Journal: FINANCIAL ACCOUNTING AN INTRODUCTION

c) Book [X] Periodical [ ] If periodical, provide vol. no and year

d) Author and Title of Chapter/article to be copied:/web address
(for periodicals only)

e) Publisher: OXFORD UNIVERSITY PRESS Place of publication: SOUTH AFRICA

f) ISBN/ISSN 9780190425524 Total no of pages in book: 721

g) Page no. to be copied: 289-291, 317, 319, 324-325, 430, 438

h) No. of copies required: 1

i) Copies to be made from

Single item handout	Library' s short loan collection	Course pack	Electronic copy
			√

j) For which Academic year will the copies be prescribed: 2020

k) No. of students registered for the course 792

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APPLICATION APPROVED	
APPLICATION NOT APPROVED	

Tel: (031) 260 7455, Fax: (031) 260 3581, Cell: 083 327 9846 Email: phaladr@ukzn.ac.za

Annexure 21: Threshold Concepts Tutorial Programme Questions

ACCOUNTING 101 THRESHOLD CONCEPTS TUTORIAL QUESTION

WEEK 1

Question

Cuties-4-U Pet Shop, "Cuties", sold 2 rabbits to Smally Primary School on credit for R600 per rabbit on 3 January 2020. Cuties incurred a purchase price of R250 per rabbit.

Required

Prepare the journal entry to record this transaction.

Solution

03-Jan-20	DR		Trade receivables (assets)	1 200	
		CR	Sales income (equity)		1 200
Credit sales of inventory to Smally Primary School					

03-Jan-20	DR		Cost of sales (equity)	500	
		CR	Inventory (asset)		500
Cost of inventory sold to Smally Primary School					

Explanation

- The Accounting equation tells us that the total assets of a business comprise of funds from the owner and funds that the business borrows.
- The equation is as follows: 'assets = equity + liabilities'.
- A debtor, 'trade receivables', was raised on 3 January 2020 to Smally Primary School. A trade receivable is an asset. Therefore this account will be debited with R1 200.
- The sale, 'sales income', was generated on 3 January 2020. Sales income is an equity item. Therefore this account will be credited with R1 200.
- For every debited account, there has to be an equal credited account.

Did you identify the following threshold concepts?

	Yes	No	Almost
The accounting equation: Assets = Equity + Liabilities			
DR = CR			

Why are these threshold concepts in Accounting 101?

Threshold Concepts Characteristics	Explanation
Transformative	• Knowledge of the accounting equation and debits and credits transforms the way a student thinks as without it the transactions of a business may not be recorded. • Students will understand that the total assets of a business (assets) are equal to the funds of the business (equity funds + liability funds). • Students will understand that the accounting equation means that the debits and credits too must also be in balance.
Irreversible	Once a student understands these concepts, they are unlikely to be forgotten.
Integrative	Once a student grasps the accounting equation, this knowledge may be integrated with the concept of debits and credits and therefore the transactions of a business may be recorded.
Bounded	To the accounting discipline.
Troublesome	A student may confuse which accounts increase or decrease on the debit and credit sides of the accounting equation, and will therefore never be able to progress as this is the crux of the discipline.

ACCOUNTING 101 THRESHOLD CONCEPTS TUTORIAL QUESTION

WEEK 2

Question

Cuties-4-U Pet Shop, "Cuties", sold 20 000 bags of hay at R25 per bag during the 2019 year of assessment on credit. Cuties received payment for these bags on 14 February 2020. Assume that Cuties incurred R285 000 cash on expenses during the 2019 year of assessment.

Required

Prepare the profit calculation for the 31 December 2019 and 2020 years of assessment on the cash and accrual basis of accounting.

Solution

Profit Calculation - Cash Basis		
	31 December 2019	**31 December 2020**
Sales - Bags of hay	Nil	500 000
Expenses	(285 000)	Nil
Profit/ loss for the period	**(285 000)**	**500 000**

Profit Calculation - Accrual Basis		
	31 December 2019	**31 December 2020**
Sales - Bags of hay	500 000	Nil
Expenses	(285 000)	Nil
Profit/ loss for the period	**215 000**	**Nil**

Explanation

Cash Basis of Accounting

- The statement of cash flows is prepared on the *cash basis of accounting*. This means that transactions are recorded when cash is paid or cash is received.

Accrual Basis of Accounting

- The statement of financial position, statement of comprehensive income and statement of changes in equity are prepared on the *accrual basis of accounting*. This means that transactions are recorded when they actually take place.
- Income is recognised when it is earned and not necessarily when it is received.
- Expenses are recognised when they are incurred and not necessarily when they are paid.
- All income earned and all expenses incurred for a period, whether they are received or not, or paid or not, must be included for the relevant period when calculating profit.
- This ensures the relevant matching of expenses to the income generated in the relevant period.

Bank balance vs profit

- The bank balance is calculated by analysing the cash paid and cash received by the business.
- The profit is calculated using the accrual basis of accounting and includes income and expense amounts.
- These two amounts will therefore differ.

Credit Sale of The Bags of Hay – Cash Basis of Accounting

- No sales income will be reflected in the profit calculation for the 2019 year of assessment.
- The R285 000 incurred to generate the sale of the hay would be accounted for in 2019.
- The receipt of the sales income would be reflected in the 2020 year of assessment with a resultant profit of R500 000.
- It makes sense to record all the economic consequences of a transaction in the year it occurred.

Credit Sale of The Bags of Hay – Accrual Basis of Accounting

- The sales income will be reflected in the profit calculation for the 2019 year of assessment as this is when the transaction occurred.
- Therefore sales income is reflected in the same year it is earned.
- And the expenses are recognised when they are incurred to generate income.

Did you identify the following threshold concepts?

	Yes	No	Almost
 The cash basis of accounting			
 The accrual basis of accounting			

Why are these threshold concepts?

Threshold Concepts Characteristics	Explanation
Transformative	• Knowledge of the cash basis of accounting and the accrual basis of accounting transforms the way a student thinks as without it a student will not know which financial statements need to be prepared according to the appropriate basis of accounting. • At this point students have been exposed to all the financial statements. They will now understand why the statement of financial position, statement of comprehensive income and statement of changes in equity are prepared using the accrual basis of accounting and that the statement of cash flows is prepared using the cash basis of accounting. • Students will now understand that transactions are recorded when they happen, as per the accrual basis of accounting, and not when the cash is paid or cash is received for transactions, as per the cash basis of accounting. • Students will understand that when the work has been done to earn a sale or when the benefit of an expense has been incurred is when one may record a transaction, and not when cash changes hands. • Students will understand that they now need to match the expenses to the income generated for the relevant period. • Students will understand why the bank balance, calculated using cash paid and received; and the profit/ loss for the period, calculated using income and expense amounts, are different. • Students will understand that if the cash basis of accounting is used to prepare a profit calculation that includes income and expense amounts, then this would result in hugely fluctuating results that would make it difficult for users to project future cash flows and make sound economic decisions. • Students will now be better equipped to prepare profit calculations that make sense to users.
Irreversible	Once a student understands these concepts, they are unlikely to be forgotten.
Integrative	Once a student grasps an understanding of the two different bases of accounting, this knowledge may be integrated with the correct preparation of financial statements to inform users on how to correctly project future cash flows and make sound economic decisions; the statement of financial position, statement of comprehensive income and statement of changes in equity are prepared using the accrual basis of accounting and the statement of cash flows is prepared using the cash basis of accounting.
Bounded	To the accounting discipline.
Troublesome	A student may confuse the two bases of accounting resulting in the incorrect preparation of financial statements.

ACCOUNTING 101 THRESHOLD CONCEPTS TUTORIAL QUESTION

WEEK 3

Question

Cuties-4-U Pet Shop, "Cuties", has prepared the trial balance for the year ended 31 December 2019. Listed below is the additional information that was not accounted for:

1. Sweety, the owner of Cuties, has taken a business loan of R3 000 from her sister, Bubbles, on 1 November 2019. Sweety charges Cuties interest at a rate of 10% per annum, none of which has been paid by Cuties for the year ended 31 December 2019.
2. Sweety paid the rent for Cuties on 28 December 2019 for the months of December 2019 and January 2020. The monthly rent amounted to R1000.
3. Cuties invested R500 in a fixed deposit that earns 8% per annum on 1 June 2019. The interest payment has not as yet been received by Cuties.
4. Sweety arranged for students to work at two of her rabbit breeders during the holiday period. Sweety charges the rabbit breeders R750 per month for supervising the students as they care for the litters of rabbits. One of the rabbit breeders paid Sweety R1 500 on 1 December 2019 for the months of December 2019 and January 2020.
5. Display cages, purchased on 1 January 2019, for the rabbits to the value of R15 000 are expected to last for 5 years, after which they could be sold for R4 500.
6. Sweety decided to write off a debtor, Mr Fudd, who owed R1 800 as irrecoverable.
7. Sweety has reliably estimated that after Mr Fudd, 2% of the remaining trade receivables of R30 000, should be recognised as a doubtful debt.
8. Sweety paid R2 000 for stationery in January 2019. At 31 December 2019 she has R350 worth of stationery to use next year.

Required

Prepare the journal entries to record the transactions above.

Solution

31-Dec-19	DR		Interest expense	50	
		CR	Accrued expense (liability)		50
Interest on loan still owed by Cuties (R3 000 x 10% x 2/12)					

31-Dec-19	DR		Prepaid expense (asset)	1 000	
		CR	Rent expense		1 000
Rent paid in advance					

31-Dec-19	DR		Accrued income (asset)	20	
		CR	Interest income		20
Interest on loan still owed by bank (R500 x 8% x 6/12)					

31-Dec-19	DR		Service fee income	750	
		CR	Income received in advance (liability)		750
Service fee income received in advance					

31-Dec-19	DR		Depreciation expense	2 100	
		CR	Accumulated depreciation: Cages		2 100
Depreciation allocated (15 000 – 4 500)/5 x 12/12 = 2 100					

31-Dec-19	DR		Bad debts expense	1 800	
		CR	Trade receivables (Mr Fudd)		1 800
Mr Fudd written off as irrecoverable					

31-Dec-19	DR		Bad debts expense	564	
		CR	Allowance for doubtful debts		564
Provided for doubtful debts of 2% of closing trade receivables [(30 000 – 1 800) x 2%] = 564					

31-Dec-19	DR		Stationery expense	1 650	
		CR	Stationery on hand		1 650
Stationery used during the year (2 000 – 350)					

Explanation

General – Adjusting Journal Entries

- The trial balance referred to is the 'pre-adjustment trial balance'.
- The additional information listed 'adjusting journal entries'.
- The information in the general ledger records transactions that have actually happened.
- A company's recording system will result in movements that differ from what is required for financial reporting and for external users.
- Adjusting journal entries ensure that the relevant accounts and amounts are corrected.
- Therefore the profit and statement of financial position will only be accurately reflected once the adjusting journal entries are accounted for.
- A post-adjustment trial balance will be extracted after accounting for the adjusting journal entries and this information will be used to prepare the financial statements.

Accrued Expense

- Cuties has incurred an expense even though it has not been paid for.
- A liability is raised to indicate the interest is still owed by Cuties.
- Cuties has used the business loan therefore the interest should be reflected as an expense.

Prepaid Expense

- Cuties has not incurred an expense even though it has been paid for.
- An asset is raised to indicate that a future benefit will be provided.
- Cuties has not used the premises for January 2020 therefore rent should not be reflected as an expense.

Accrued Income

- Cuties has earned an income even though it has not been received.
- An asset is raised to indicate that a future benefit will be provided.
- The bank has used the fixed deposit therefore interest should be reflected as income.

Income Received in Advance

- Cuties has not earned an income even though it has been received.
- A liability is raised to indicate that the service is still owed by Cuties.
- The rabbit breeders have not used the service for January 2020 therefore service fee should not be reflected as an income.

Depreciation

- A portion of the future economic benefits of the display cages has been used, i.e. 1 out of 5 years of the asset.
- An expense in the form of depreciation is recognised.

Bad Debts

- If Mr Fudd is unable to pay a debt, the trade receivable will be written off as irrecoverable.
- An expense in the form of a bad debt is recognised.

Doubtful Debts

- If some of the trade receivables of Cuties are not expected to pay, then the amount that Sweety does not anticipate receiving should no longer be recognised as an asset.
- An expense in the form of bad debts is recognised.

On Hand

- The stationery on hand at year end of R350 meets the definition of an asset as it can be used to generate future economic benefits.
- An expense in the form of stationery of R 1 650 is recognised as the stationery asset was consumed.

Did you identify the following threshold concepts?

	Yes	No	Almost
 Understanding adjusting journal entries			

Why is this a threshold concept?

Threshold Concepts Characteristics	Explanation
Transformative	*General – Adjusting Journal Entries* • Knowledge of the adjusting journal entries transforms the way a student thinks as without it the correct trial balance would not be available to prepare the financial statements. • Students will understand that adjusting journal entries must be made to the pre-adjustment trial balance. • Students will understand that recording in the general ledger occurs daily, while reporting occurs annually. • Students will understand that the information recorded in the general ledger reflects transactions that have actually happened and that this differs from what is required to be reported to external users. • Students will understand that these differences in the accounts and amounts will be corrected with adjusting journal entries. • Students will understand that only once these adjusting journal entries are accounted for, will the profit and statement of financial position be accurately reflected. *Accrued Expense* • Students will understand that the company has incurred an expense even though it has not been paid for. • Students will understand that a corresponding liability is raised to indicate the interest is still owed by the company. *Prepaid Expense*

	• Students will understand that the company has not incurred an expense even though it has been paid for. • Students will understand that a corresponding asset is raised to indicate that a future benefit will be provided. *Accrued Income* • Students will understand that the company has earned an income even though it has not been received. • Students will understand that a corresponding asset is raised to indicate that a future benefit will be provided. *Income Received in Advance* • Students will understand that the company has not earned an income even though it has been received. • Students will understand that a corresponding liability is raised to indicate that the service is still owed by Cuties. *Depreciation* • Students will understand that a portion of the future economic benefits of an asset has been used. • Students will understand that a corresponding expense in the form of depreciation will be recognised. *Bad Debts* • Students will understand that if a debtor is unable to pay a debt, the trade receivable will be written off as irrecoverable. • Students will understand that a corresponding expense in the form of a bad debt will be recognised. *Doubtful Debts* • Students will understand that if some of the trade receivables of the company are not expected to pay, then the amount the owner does not anticipate receiving should no longer be recognised as an asset. • Students will understand that a corresponding expense in the form of bad debts will be recognised. *On Hand* • Students will understand that an office consumable on hand at year end will meet the definition of an asset as it can be used to generate future economic benefits. • Students will understand that a corresponding expense in the form of the office consumable will be recognised as the office consumable asset will be consumed.
Irreversible	Once a student understands these concepts, they are unlikely to be forgotten.

Integrative	Once a student grasps what adjusting journal entries are and why they are necessary, this knowledge may be integrated in order to correct the differences in the general ledger accounts and amounts. Students would then be able to integrate this corrected general ledger to prepare the correct trial balance in order to prepare accurate financial statements for reporting purposes.
Bounded	To the accounting discipline.
Troublesome	• A student may confuse how to classify adjusting journal entry accounts. • A student may confuse the instance when an expense is incurred or paid. • A student may confuse the instance when an income is earned or received. • A student may confuse when to classify an office consumable as an asset and expense.

ACCOUNTING 101 THRESHOLD CONCEPTS TUTORIAL QUESTION

WEEK 4

Question

Sweety's sister, Bubbles, visited Sweety on New Year's Day, 1 January 2020, and asked if she would let her know when she would be able to pay back some of the business loan extended to her. Sweety is reconciling her bank account with the bank statement received from Money Bunny Bank as at 31 December 2019. She has the bank reconciliation for November 2019, the bank account, and her bank statement for December 2019.

Bank reconciliation statement for November 2019

Balance according to bank statement		11 480
Add: Deposit not yet recorded		2 322
Less: Unpresented cheques		-6 340
Cheque 002	1900	
Cheque 005	600	
Cheque 008	400	
Cheque 010	840	
Cheque 011	300	
Cheque 012	300	
Cheque 013	2000	
Less: Error on the bank statement (150 - 105)		-90
Balance according to the Bank account		**7 372**

DR		**BANK**				**CR**
1 Dec	Balance	7 372	1	#14	Inventory	2 200
5	Sales	4 000	7	#15	Wages	300
8	Sales	1 200	8	#16	Inventory	4 800
15	Sales	120	10	#17	Petrol	800
28	Sales	2 400	14	#18	Wages	300
			19	#19	Talk-time	600
			21	#20	Wages	300
			28	#21	Wages	300
					Balance c/d	5 492
		15 092				15 092
1 Jan	Balance b/d	5 492				

Details of Transactions	Date	Debit	Credit	Balance
BALANCE	26 Nov			11 480
DEPOSIT	28 Nov		2 322	13 802
CORRECTION OF ERROR	01 Dec	90	0	13 712
CHEQUE 002	01 Dec	1900	0	11 812
CHEQUE 005	01 Dec	600	0	11 212
CHEQUE 008	05 Dec	400	0	10 812
DEPOSIT	05 Dec	0	4000	14 812
PAYMENT TO THIRD PARTY TELKOM	05 Dec	300	0	14 512
CHEQUE 013	06 Dec	2000	0	12 512
CHEQUE 014	06 Dec	2200	0	10 312
CHEQUE 011	07 Dec	300	0	10 012
DEPOSIT	08 Dec	0	1 200	11 212
DEPOSIT	15 Dec	0	120	11 332
CHEQUE 015	16 Dec	300	0	11 032
CHEQUE 016	20 Dec	4800	0	6 232
DEPOSIT	21 Dec	0	900	7 132
CHEQUE 018	22 Dec	300	0	6 832
CHEQUE 020	26 Dec	300	0	6 532
OMUTUAL 1234 5678 INSURANCE	26 Dec	598	0	5 934
SERVICE FEES	26 Dec	140	0	5 794
COMISSION ON STOP ORDERS	26 Dec	12	0	5 782
INTEREST	26 Dec	0	30	5 812

Required

Explain to Bubbles why Sweety's needs to update her general ledger and prepare the bank reconciliation statement for December 2019 before she can tell her when she can repay the loan.

Solution

- The opening balance in the bank account as at 1 December 2019 is different to the balance on the bank statement as at 1 December 2019.
- Cheques 002, 005, 008 and 011 which appear on the December 2019 bank statement do not appear in the December 2019 bank account as they were issued in November 2019. They will not appear on the December bank reconciliation as they have been presented for payment.
- Cheques 010 and 012 which appear on the November 2019 bank reconciliation statement but do not appear on the December 2019 bank statement as they have not been presented for payment and will be reflected in the December 2019 bank reconciliation statement.

DR		BANK				CR
31 Dec	Balance b/d	5 492	31 Dec		Telephone	300
	Interest income	30			Insurance	598
	Debtors	900			Bank charges	152
					Balance c/d	5 372
		6 422				6 422
01 Jan	Balance b/d	5 372				

TELEPHONE						
31 Dec	Bank	300				
INSURANCE						
31 Dec	Bank	598				
BANK CHARGES						
31 Dec	Bank	152				
INTEREST INCOME						
			31 Dec		Bank	30

BANK RECONCILIATION STATEMENT FOR DECEMBER		
Balance according to bank statement		5 812
Add: Deposit not yet recorded		2 400
Less: Unpresented cheques		-2 840
	840	
	300	
	800	
	600	
	300	
Balance according to the Bank account		**5 372**

Explanation

- Step 1:
  Obtain the closing balance from the bank statement and the month-end balance from the bank account in the general ledger.
- Step 2:
  Identify the differences between the bank statement and the bank account.
  - The debit entries on the bank statement are compared to the credit entries on the bank account.
  - The credit entries on the bank statement are compared to the debit entries on the bank account.
- Step 3:
  Identify which items are adjusting differences, that update the bank account:
  - Transactions Sweety was not aware of before receiving the bank statement.
  - Examples: Interest, bank charges, direct deposits.

  Identify which items are timing differences, that will appear on the bank reconciliation statement:
  - Transactions with difference in timing between when Sweety's records information and when Money Bunny Bank records their information.
  - Examples: Un-presented cheques.
- Step 4:
  Update the general ledger with adjusting differences.
- Step 5:
  Obtain the November 2019 bank reconciliation, the prior month, and determine if any of the differences in step 3 are already on the prior bank statement. If any of the prior month differences are not resolved in December 2019, they must be reflected on the December 2019 bank reconciliation again.
- Step 6: Draft the bank reconciliation statement for December 2019 with the timing differences. This balance should be the same as the updated bank account.

Did you identify the following threshold concepts?

	Yes	No	Almost
 Preparing a bank reconciliation			

Why are these threshold concepts in Accounting 101?

Threshold Concepts Characteristics	Explanation
Transformative	• Knowledge of the steps of the bank reconciliation statement procedure transforms the way a student thinks as without it the bank statement and the bank account subsidiary ledger account will never reconcile. • Students will understand that they must compare the debit entries on the bank statement to the credit entries on the bank account. • Students will understand that they must compare the credit entries on the bank statement to the debit entries on the bank account. • Students will understand that adjusting differences are items that are used to update the bank account. • Students will understand that timing differences are items that are used to update the bank reconciliation statement. • Students will understand the examples of adjusting differences and timing differences. • Students will understand that the bank reconciliation statement from the prior month must be examined in order to determine if any timing differences have been resolved, and if not, they must be reflected on the latest bank reconciliation statement. • Students will understand that once these differences are updated, the bank reconciliation statement and bank account balances should be the same.
Irreversible	Once a student understands these concepts, they are unlikely to be forgotten.
Integrative	Once a student grasps the steps of the bank reconciliation statement process, this knowledge may be integrated with the concept of debits and credits, and general ledger accounts and therefore the bank reconciliation statement and bank account balances will be the same.
Bounded	To the accounting discipline.
Troublesome	• A student may confuse which debit entries and which credit entries to compare between the bank account and bank statement. • A student may confuse adjusting differences with timing differences. • A student may confuse which type of differences to update the bank account with • A student may confuse which type of differences to update the bank reconciliation with. • A student may confuse how to update the latest bank reconciliation statement.

ACCOUNTING 101 THRESHOLD CONCEPTS TUTORIAL QUESTION

WEEK 5

Question

Cuties-4-U Pet Shop, "Cuties", is having trouble calculating how much they owe their sawdust shavings supplier, Dusty Wholesalers. Sweety has collected the statements received from Pixie Dust Wholesalers, "Pixie", for the month of March 2020 as well as the creditor's account in the trade payable subsidiary ledger of Cuties for March 2020.

Pixie Dust Wholesalers **Trade Payables Subsidiary Ledger**					
07-Mar	Purchases returns	2 000,00	01-Mar	Balance b/d	7 590,50
10-Mar	Bank	7 590,50	09-Mar	Purchases	5 340,00
29-Mar	Bank	10 000,00	15-Mar	Purchases	6 706,00
29-Mar	Purchases returns	1 000,00	20-Mar	Purchases	13 000,00
31-Mar	Balance c/d	16 456,00	23-Mar	Purchases	2 450,00
			28-Mar	Purchases	1 960,00
		37 046,50			37 046,50
			01-Apr	Balance b/d	16 456,00

Pixie Dust Wholesalers **Debtors Statement**				
		ACCOUNT NO: XYZ12345 DATE: 25 March 2020		
CUTIES-4-U PET SHOP				
		Debit	Credit	Balance
01-Mar	Opening balance			7 590,50
08-Mar	Invoice AB390	5 340,00		12 930,50
12-Mar	Receipt CD125		7 590,50	5 340,00
15-Mar	Invoice AB421	6 670,00		12 010,00
18-Mar	Credit note EF80		2 000,00	10 010,00
20-Mar	Invoice AB436	12 350,00		22 360,00
22-Mar	Invoice AB460	2 450,00		24 810,00
24-Mar	Invoice AB466	4 800,00		29 610,00
25-Mar	Invoice AB655	1 760,00		**31 370,00**

Required

1. Prepare an adjusting trade payables subsidiary ledger for Pixie Dust Wholesalers for March 2020.
2. Prepare the trade payables reconciliation statement for March 2020.
3. Prepare a remittance advice for March 2020.

Solution

1. Adjusting trade payables subsidiary ledger for Pixie Dust Wholesalers for March 2020

Pixie Dust Wholesalers Trade Payables Subsidiary Ledger					
31-Mar	Error correction	36	31-Mar	Balance b/d	16 456
	Invoice AB421				
	Trade discount omitted	650			
	Invoice AB436				
	Balance c/d	15770			
		16456			16 456
			01-Apr	Balance b/d	15 770

2. Trade payables reconciliation statement for March 2020

Pixie Dust Wholesalers Trade Payables/ Creditors' Reconciliation Statement at 31 March 2020	
Balance per supplier's statement	31 370
Less: Invoice AB466 - goods not yet received	(4 800)
Less: Invoice AB655incorrectly debited on the statement	(1 760)
Add: Invoice for goods purchased on 28 March	1 960
Less: Payment made on 29 March	(10 000)
Less: Purchase return on 29 March	(1 000)
Balance as per trade payables ledger	**15 770**

3. Remittance advice for March 2020

Pixie Dust Wholesalers Remittance Advice on 31 March 2020	
Balance per supplier's statement	31 370
Less: Invoice AB466 - goods not yet received	(4 800)
Less: Invoice AB655incorrectly debited on the statement	(1 760)
Add: Invoice for goods purchased on 28 March	1 960
Less: Payment made on 29 March	(10 000)
Less: Purchase return on 29 March	(1 000)
Amount of cheque/EFT	**15 770**

Explanation

General

- Sweety will have her own information about Pixie in the subsidiary ledger that she will need to compare to the statement that Pixie gives her to establish if there are any differences and hence what amount actually needs to be paid to Pixie.
- Sweety will note that the closing balance on Pixie's account in the subsidiary ledger is R16 456.
- Sweety will note that the closing balance on the statement that Pixie gives her is R31 370.
- The statement from Pixie reflects goods purchased by Cuties as debits payments received as credits as this from Pixie's point of view.
- The trade payables subsidiary ledger account on the other hand reflects goods purchased by Cuties as credits and payments received as debits as this is from Cuties' point of view.

Transactions recorded at different amounts

- Identify all transactions recorded in both the trade payable subsidiary ledger and on the statement that have different amounts.
- The adjustments to these transactions will be made in the form of a correcting journal that is posted to the trade payable subsidiary ledger.
- The first transaction that has differing amounts is a purchase on 15 March. Let us assume that Pixie correctly charged Cuties an amount of R 6 670, then Cuties needs to adjust its overstatement of R36 in all the relevant financial statements if need be. (R6 706 – R6 670)
- The second transaction that has differing amounts is a purchase on 20 March. Let us assume that a trade discount agreed upon at the time of purchase will take the amount net of the discount into consideration ie. R12 350. (R13 000 – R12 350)/ R13 000 = 5%.

Transactions on statement but not in trade payable subsidiary ledger

- The first transaction that appears on the statement but not in the trade payable subsidiary ledger is a purchase on 24 March. There seems to have been a delay to deliver goods to Cuties. Cuties will only record the purchase upon receipt of the goods and the verification of all details of the purchase. The transaction is therefore recorded in the creditors' reconciliation statement.
- The second transaction that appears on the statement but not in the trade payable subsidiary ledger is an error on 25 March. The purchase was incorrectly captured by Pixie as a sale to Cuties instead of Cut Ties (Pty) Ltd. Cuties will not record errors made by the creditor in their trade payable subsidiary ledger. The transaction is therefore recorded in the creditors' reconciliation statement.

Transactions in trade payable subsidiary ledger but not on statement

- The supplier statement's end date was 25 March.
- This means that any transactions that occurred after this date in the trade payable subsidiary ledger will be reflected on the creditors' reconciliation statement.
- There are three transactions that occur after 25 March; a purchase on 28 March, a payment on 29 March and a purchase return on 29 March.

Did you identify the following threshold concepts?

	Yes	No	Almost
 Preparing a creditors reconciliation statement			
 Preparing a remittance advice			

Why are these threshold concepts in Accounting 101?

Threshold Concepts Characteristics	Explanation
Transformative	• Knowledge of the steps of the creditors reconciliation statement procedure transforms the way a student thinks as without it the supplier's statement and the trade payables subsidiary ledger account will never reconcile. • Students will understand that a client will have two sets of information about their creditors; their own information about their creditors and the statement from their creditors to compare to and that there may be differences and that it is the client's responsibility to calculate the amount that actually is due to the creditors. • Students will understand that on the statement from the creditor, the goods purchased will be reflected as debit entries. • Students will understand that on the statement from the creditor, the payments received will be reflected as credit entries. • Students will understand that these debit and credit entries are viewed from the perspective of the supplier of the client. • Students will understand that in the trade payable subsidiary ledger, the goods purchased will be reflected as credit entries. • Students will understand that in the trade payable subsidiary ledger, the payments made will be reflected as debit entries. • Students will understand that these debit and credit entries are viewed from the perspective of the client. • Students will understand that transactions recorded in both the trade payables subsidiary ledger account and on the statement that have differing amounts will be adjusted on the trade payables subsidiary ledger account. • Students will understand that they need to inspect the purchases journal or any other relevant journals used to initially record the transaction to see if the error was carried forward or not. • Students will understand that if a trade discount is agreed upon at the time of purchase, that the amount to be recorded is net of the discount. • A student will understand that an asset will only be recognised when the risks and rewards of ownership have passed, normally upon delivery to the client. • Students will understand that any errors made by the creditor will be included in the creditors' reconciliation statement as this is not the client's fault.

	• Students will understand that any transactions in the trade payable subsidiary ledger that occurred after the date in the supplier statement will be reflected on the creditors' reconciliation statement. • Students will understand that this process can be likened to that of adjusting differences that are used to update the bank account and timing differences that are used to update the bank reconciliation statement in the bank reconciliation process. • Students will understand that just like the bank reconciliation process, the creditors' reconciliation statement is used as an internal check of the bank account and trade payables subsidiary ledger accounts respectively • Students will understand that the difference between the adjusted trade payables subsidiary ledger account and the statement balance can be explained by means of two types of timing differences; one, looking at entries on the trade payables subsidiary ledger and not on the statement and two, the inclusion of entries shown on the statement but not on the trade payable subsidiary ledger. • Students will understand that an explanation in the form of a remittance advice will have to be sent with an accompanying cheque payment commencing with the amount the creditor has indicated the client owes.
Irreversible	Once a student understands these concepts, they are unlikely to be forgotten.
Integrative	Once a student grasps the steps of the creditors' reconciliation statement process, this knowledge may be integrated with the concept of debits and credits, and general ledger accounts and therefore the creditors' reconciliation statement and trade payables subsidiary ledger balances will be the same.
Bounded	To the accounting discipline.
Troublesome	• A student may confuse which debit entries and which credit entries to compare between the trade payable subsidiary ledger account and supplier statement. • A student may confuse adjusting differences with timing differences. • A student may confuse which type of differences to update the trade payable subsidiary ledger account with • A student may confuse which type of differences to update the creditors' reconciliation with. • A student may confuse how to update the latest creditors' reconciliation statement.

ACCOUNTING 101 THRESHOLD CONCEPTS TUTORIAL QUESTION

WEEK 6

Question

Cuties-4-U Pet Shop, "Cuties", purchased 50 bags of rabbit pellets by Yummy (Pty) Ltd for R90 per bag for cash and 30 bags of rabbit pellets by Delish (Pty) Ltd for R85 per bag on credit. Cuties sold 20 bags of rabbit pellets by Yummy (Pty) Ltd for R150 per bag for cash and 15 bags of rabbit pellets by Delish (Pty) Ltd for R130 per bag on credit.

Required

Prepare the journal entries to record these transactions and account for Value-Added Taxation (VAT). All figures are exclusive of VAT.

Solution

DR		Inventory (50 x 90)	4 500	
DR		SARS (VAT) (4 500 x 15%)	675	
	CR	Bank		5 175
50 bags of rabbit pellets by Yummy (Pty) Ltd purchased for cash				

DR		Inventory (30 x 85)	2 550	
DR		SARS (VAT) (2 550 x 15%)	383	
	CR	Trade payables		2 933
30 bags of rabbit pellets by Delish (Pty) Ltd purchased on credit				

DR		Bank	3 450	
	CR	SARS (VAT) (3 000 x 15%)		450
	CR	Sales (20 x 150)		3 000
20 bags of rabbit pellets by Yummy (Pty) Ltd sold for cash				

DR		Trade receivables	2 243	
	CR	SARS (VAT) (1 950 x 15%)		293
	CR	Sales (15 x 130)		1 950
15 bags of rabbit pellets by Delish (Pty) Ltd sold on credit				

Explanation

Journal 1

- The actual cost of inventory purchased for cash is recorded exclusive of VAT.
- VAT paid to Yummy (Pty) Ltd is recognised as an asset because Cuties will claim the VAT back from SARS (Input VAT).
- Bank is inclusive of VAT as Cuties pays the VAT inclusive amount before they can claim the VAT back from SARS.

Journal 2

- The actual cost of inventory purchased on credit is recorded exclusive of VAT.
- VAT due to Delish (Pty) Ltd is recognised as an asset because Cuties will claim the VAT back from SARS (Input VAT).
- Trade payable is inclusive of VAT as Cuties will pay the VAT inclusive amount before they can claim the VAT back from SARS.

Journal 3

- The sales income for cash is recorded exclusive of VAT.
- VAT received by Cuties is recognised as a liability when inventory is sold for cash because Cuties will collect the VAT from clients and pay the VAT over to SARS (Output VAT).
- Bank is inclusive of VAT as Cuties collects the VAT inclusive amount before they can pay the VAT over to SARS.

Journal 4

- The sales income for credit is recorded exclusive of VAT.
- VAT owed to Cuties is recognised as a liability when inventory is sold on credit because Cuties will collect the VAT from clients and pay the VAT over to SARS (Output VAT).
- Trade payable is inclusive of VAT as Cuties will collect the VAT inclusive amount before they can pay the VAT over to SARS.

Did you identify the following threshold concepts?

	Yes	No	Almost
 Recording VAT – Which amounts include/ exclude VAT?			
 Recording VAT – When is VAT an asset/ liability?			

Why are these threshold concepts in Accounting 101?

Threshold Concepts Characteristics	Explanation
Transformative	• Knowledge of how to record VAT transforms the way a student thinks as without it the transactions of a business may not be recorded accurately. • Students will understand the way in which information is worded in order to determine which amounts include VAT and which amounts excluded VAT. • A student will understand that sales, cost of sales and inventory exclude VAT. • A student will understand that cash paid, cash received, trade payables and trade receivables include VAT. • Students will understand when VAT is an asset and when VAT is a liability. • Students will understand that VAT is considered to be an asset, a debit, when a company makes cash or credit purchases. • Students will understand that VAT is considered to a liability, a credit, when a company makes cash or credit sales.
Irreversible	Once a student understands these concepts, they are unlikely to be forgotten.
Integrative	Once a student grasps which amounts include and which amounts exclude VAT, this knowledge may be integrated with the concept when is VAT an asset or when is VAT a liability in order to correctly prepare and balance a journal entry.
Bounded	To the accounting discipline.
Troublesome	• A student may confuse which amounts include and which exclude VAT. • A student may also confuse when is VAT an asset or when is VAT a liability. • A student may also confuse when to zero-rate or exempt VAT from transactions. • A student may not account for VAT at all even if a company is identified as a VAT vendor.

ACCOUNTING 101 THRESHOLD CONCEPTS TUTORIAL QUESTION

WEEK 7

Question

Sweety's family doctor, Dr Whatsup, was interested in investing in Cuties-4-U Pet Shop, "Cuties", if Cuties is able to repay Dr Whatsup's capital in 5 years as well as provide him with a regular, fixed income annually.

Required

Discuss if Cuties is able to meet Dr Whatsup's needs.

Solution

Yes, Cuties has a class of share that will meet Dr Whatsup's needs. Preference dividends or fixed dividends is the type of dividend that Dr Whatsup should invest in. The specific type of preference dividend that Dr Whatsup should invest in has the following type of rights; no voting rights, cumulative fixed distribution rate, redeemable at the option of the shareholder.

Explanation

Expense vs Dividend

- A dividend is a distribution of the company's profit after tax.
- It is key to differentiate between 'distribution of profits' and 'expense'.
- An 'expense' is represented by a decrease in assets or an increase in liabilities not due to a transaction with the owner. Expenses must be accounted for where calculating profit.
- A 'distribution of profit' is also represented by a decrease in assets or an increase in liabilities with the key difference being that it is due to a transaction with the owner.
- A dividend is not an expense against profit, but instead a distribution of profits.

Ordinary vs Preference Dividends

- Ordinary dividends paid have the effect of differing at each declaration date.
- The benefit of ordinary shares however, is that when the company is performing well, there is a possibility of a higher dividend.
- Preference shares on the other hand offer a less risky, fixed distribution at declaration date.

Shares With The Right To Be Redeemed

- Specific shares allow the shareholder the right to invest in a company for specified period of time.
- The company has to pay back the shareholder's capital within this specified period.
- The length of the investment and whether the shares are redeemable at the option of the shareholder or company are decided on the date of issue.
- In this scenario, the shares are redeemable at the option of Dr Whatsup.
- This means that the shares will possess similar characteristics to that of a loan as the Dr Whatsup will receive a fixed distribution annually as well as his capital after the agreed upon length of time.
- Dr Whatsup may also possibly receive a premium on redemption, an additional amount, upon the receipt of his full capital investment.

Did you identify the following threshold concept?

	Yes	No	Almost
 Redeemable Cumulative Preference Shares Repayable at a Specified Date vs Loan			

Why are these threshold concepts in Accounting 101?

Threshold Concepts Characteristics	Explanation
Transformative	• Knowledge of the different types of preference shares transforms the way a student thinks as without it a student will not be able to distinguish between redeemable cumulative shares repayable after a specified period and a loan. • Students will understand that shares, ordinary and preference, are both equity accounts in the statement of financial position. • Students will understand that a loan is a long-term liability account in the statement of financial position. • Students will realise that apart from the differing tax consequences, the economic reality, or substance of the transaction for Dr Whatsup, is the same as that of a loan.
Irreversible	Once a student understands these concepts, they are unlikely to be forgotten.
Integrative	Once a student grasps an understanding of different types of preference shares, this knowledge may be integrated with the principles of a loan to account for the economic reality of the transaction.
Bounded	To the accounting discipline.
Troublesome	A student may confuse the accounts in the statement of financial position and may not be able to understand the similarities between an equity preference share and a long-term liability loan account. Students may want to keep the principles of preference shares in the domain of the equity account only.

Annexure 22: Composite MBTI Answer Grids Prior to and Upon Completion of the Threshold Concepts Tutorial Programme

Name: P1											
	a	b		a	b		a	b		a	b
1.		x	2.	x		3.	x		4.	x	
5.		x	6.		x	7.		x	8.	x	
9.		x	10.	x		11.		x	12.		x
13.		x	14.		x	15.		x	16.		x
17.	x		18.		x	19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P1											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.	x		4.		x
5.		x	6.	x		7.		x	8.	x	
9.		x	10.		x	11.		x	12.	x	
13.		x	14.		x	15.		x	16.		x
17.	x		18.	x		19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P2											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.	x		4.		x
5.	x		6.		x	7.		x	8.	x	
9.		x	10.		x	11.	x		12.		x
13.	x		14.	x		15.		x	16.	x	
17.	x		18.		x	19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P2											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.	x		4.		x
5.	x		6.		x	7.	x		8.	x	
9.	x		10.		x	11.	x		12.	x	
13.	x		14.	x		15.	x		16.		x
17.		x	18.		x	19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P3											
	a	b		a	b		a	b		a	b
1.		x	2.	x		3.	x		4.		x
5.	x		6.	x		7.	x		8.	x	
9.	x		10.		x	11.		x	12.		x
13.	x		14.	x		15.		x	16.		x
17.	x		18.		x	19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P3											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.		x	4.		x
5.	x		6.	x		7.	x		8.	x	
9.		x	10.		x	11.		x	12.		x
13.	x		14.	x		15.		x	16.		x
17.	x		18.	x		19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P4											
	a	b		a	b		a	b		a	b
1.	x		2.		x	3.	x		4.		x
5.	x		6.	x		7.		x	8.	x	
9.	x		10.		x	11.		x	12.		x
13.	x		14.	x		15.		x	16.	x	
17.	x		18.		x	19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P4											
	a	b		a	b		a	b		a	b
1.	x		2.		x	3.	x		4.		x
5.	x		6.		x	7.		x	8.	x	
9.	x		10.		x	11.		x	12.	x	
13.	x		14.		x	15.		x	16.	x	
17.	x		18.		x	19.	x		20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P5											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.		x	4.		x
5.	x		6.		x	7.		x	8.		x
9.	x		10.		x	11.	x		12.		x
13.	x		14.		x	15.		x	16.		x
17.	x		18.		x	19.		x	20.	x	
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P5											
	a	b		a	b		a	b		a	b
1.	x		2.		x	3.	x		4.		x
5.		x	6.	x		7.		x	8.	x	
9.		x	10.		x	11.	x		12.	x	
13.	x		14.		x	15.	x		16.	x	
17.	x		18.		x	19.	x		20.	x	
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P6											
	a	b		a	b		a	b		a	b
1.	x		2.		x	3.	x		4.		x
5.		x	6.		x	7.		x	8.	x	
9.		x	10.	x		11.		x	12.		x
13.	x		14.		x	15.		x	16.	x	
17.	x		18.	x		19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P6											
	a	b		a	b		a	b		a	b
1.	x		2.		x	3.	x		4.		x
5.		x	6.		x	7.		x	8.	x	
9.		x	10.		x	11.		x	12.	x	
13.	x		14.		x	15.		x	16.	x	
17.		x	18.		x	19.		x	20.	x	
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P7											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.		x	4.	x	
5.		x	3.		x	7.		x	8.	x	
9.	x		10.		x	11.		x	12.		x
13.	x		14.	x		15.		x	16.	x	
17.		x	18.		x	19.	x		20.	x	
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P7											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.		x	4.		x
5.		x	3.		x	7.		x	8.		x
9.	x		10.		x	11.		x	12.		x
13.	x		14.		x	15.		x	16.	x	
17.		x	18.	x	x	19.		x	20.	x	
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P8											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.	x		4.		x
5.	x		6.		x	7.		x	8.	x	
9.		x	10.		x	11.		x	12.		x
13.	x		14.		x	15.		x	16.		x
17.	x		18.		x	19.		x	20.	x	
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P8											
	a	b		a	b		a	b		a	b
1.	x		2.		x	3.	x		4.	x	
5.	x		6.		x	7.		x	8.	x	
9.	x		10.	x		11.		x	12.		x
13.	x		14.	x		15.		x	16.	x	
17.	x		18.		x	19.		x	20.	x	
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P9											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.	x		4.		x
5.	x		6.		x	7.		x	8.		x
9.		x	10.		x	11.		x	12.		x
13.		x	14.	x		15.		x	16.		x
17.	x		18.		x	19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P9											
	a	b		a	b		a	b		a	b
1.		x	2.	x		3.	x		4.	x	
5.		x	6.		x	7.		x	8.	x	
9.		x	10.	x		11.		x	12.		x
13.	x		14.		x	15.		x	16.	x	
17.		x	18.	x		19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P10											
	a	b		a	b		a	b		a	b
1.	x		2.	x		3.	x		4.		x
5.		x	6.		x	7.		x	8.	x	
9.	x		10.		x	11.		x	12.	x	
13.	x		14.		x	15.		x	16.	x	
17.	x		18.	x		19.		x	20.	x	
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P10											
	a	b		a	b		a	b		a	b
1.	x		2.	x		3.	x		4.	x	
5.		x	6.		x	7.		x	8.	x	
9.		x	10.		x	11.		x	12.	x	
13.	x		14.		x	15.		x	16.	x	
17.	x		18.	x		19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P11											
	a	b		a	b		a	b		a	b
1.	x		2.	x		3.		x	4.		x
5.		x	6.	x		7.	x		8.		x
9.	x		10.	x		11.		x	12.		x
13.		x	14.		x	15.	x		16.	x	
17.	x		18.	x		19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P11											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.	x		4.		x
5.		x	6.	x		7.	x		8.		x
9.		x	10.	x		11.		x	12.		x
13.		x	14.		x	15.	x		16.	x	
17.	x		18.	x		19.	x		20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P12											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.		x	4.		x
5.		x	6.	x		7.		x	8.	x	
9.		x	10.	x		11.		x	12.		x
13.		x	14.	x		15.		x	16.		x
17.		x	18.		x	19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P12											
	a	b		a	b		a	b		a	b
1.		x	2.	x		3.	x		4.	x	
5.		x	6.	x		7.		x	8.	x	
9.	x		10.		x	11.		x	12.	x	
13.		x	14.		x	15.		x	16.	x	
17.		x	18.		x	19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P13											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.	x		4.	x	
5.		x	6.	x		7.		x	8.	x	
9.	x		10.	x		11.		x	12.		x
13.	x		14.		x	15.	x		16.		x
17.	x		18.		x	19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P13											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.	x		4.		x
5.	x		6.	x		7.		x	8.	x	
9.		x	10.		x	11.		x	12.		x
13.	x		14.		x	15.	x		16.		x
17.	x		18.	x		19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P14											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.	x		4.		x
5.		x	6.		x	7.		x	8.		x
9.		x	10.		x	11.		x	12.		x
13.	x		14.		x	15.		x	16.		x
17.	x		18.		x	19.		x	20.	x	
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P14											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.	x		4.		x
5.		x	6.		x	7.		x	8.		x
9.		x	10.		x	11.		x	12.		x
13.	x		14.		x	15.		x	16.		x
17.	x		18.		x	19.		x	20.	x	
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P15											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.	x		4.		x
5.	x		6.	x		7.	x		8.		x
9.		x	10.		x	11.		x	12.		x
13.		x	14.		x	15.		x	16.		x
17.		x	18.		x	19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P15											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.	x		4.		x
5.	x		6.	x		7.		x	8.		x
9.		x	10.	x		11.		x	12.		x
13.		x	14.		x	15.		x	16.		x
17.	x		18.		x	19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P16											
	a	b		a	b		a	b		a	b
1.	x		2.	x		3.		x	4.		x
5.		x	6.		x	7.		x	8.		x
9.	x		10.		x	11.		x	12.		x
13.	x		14.		x	15.		x	16.		x
17.		x	18.		x	19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P

Name: P16											
	a	b		a	b		a	b		a	b
1.		x	2.		x	3.		x	4.		x
5.	x		6.		x	7.		x	8.		x
9.	x		10.	x		11.		x	12.		x
13.	x		14.		x	15.		x	16.		x
17.		x	18.		x	19.		x	20.		x
Total			Total			Total			Total		
	E	I		S	N		T	F		J	P