

**THE DEVELOPMENT OF CRITICAL THINKING IN THE FIRST-YEAR
FINANCIAL ACCOUNTING CURRICULUM AT AN OPEN DISTANCE
AND E-LEARNING INSTITUTION IN SOUTH AFRICA**

by

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DATE: DECEMBER 2020

DECLARATION

I declare that

THE DEVELOPMENT OF CRITICAL THINKING IN THE FIRST-YEAR FINANCIAL ACCOUNTING CURRICULUM AT AN OPEN DISTANCE AND E-LEARNING INSTITUTION IN SOUTH AFRICA

is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.



13 December 2020

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Nothing is impossible with God (Luke 1:37).

Having companionship on the road travelled during any journey, makes the longest and toughest journey possible. Without the strength received from our Father in heaven, completing my master's degree would not have been possible. I want to thank Him for all the special people He placed on this road to provide encouragement and support when I needed it most.

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ABSTRACT

HJ Dry

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Title of dissertation:

THE DEVELOPMENT OF CRITICAL THINKING IN THE FIRST-YEAR FINANCIAL ACCOUNTING CURRICULUM AT AN OPEN DISTANCE AND E-LEARNING INSTITUTION IN SOUTH AFRICA

For the knowledge economy of the twenty-first century, intellectual skills (such as critical thinking) have been identified as imperative for success. Educational institutions have a responsibility to equip students with the knowledge and skills required for future employment. The South African Institute of Chartered Accountants has identified critical thinking as one of the skills that should be developed in Financial Accounting students who wish to become chartered accountants.

For this limited-scope dissertation a qualitative study was done, applying a constructivist paradigm to a case study design, to explore the development of critical thinking in first-year Financial Accounting students in an open distance and e-learning context in South Africa. To achieve this, data were collected through semi-structured interviews with twelve academics and the use of document analysis.

As the focus of the study was limited to two first-year financial accounting modules which form part of the South African Institute of Chartered Accountants accredited programme taught at an open distance and e-learning institution, the findings cannot be generalised. While the perceptions of students were not considered in the study, the findings provide valuable insight into the development of critical thinking in accounting modules.

The findings revealed that, although academics believe critical thinking skills and good thinking habits should be developed in first-year Financial Accounting students, it is currently only done through a content-centred approach, or not at all. Furthermore, only technologies which academics are comfortable using, are being incorporated,

mainly for the delivery of content. The recommendations made for curriculum evaluation and professional development relate specifically to these findings.

KEY TERMS

Accountants, Bloom's taxonomy, critical thinking, critical thinking skills, distance education, Financial Accounting, first-year students, good thinking habits, online learning, social constructivism, *ubuntu*

OPSOMMING

HJ Dry

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Titel van verhandeling:

DIE ONTWIKKELING VAN KRITIESE DENKE IN DIE EERSTE JAAR VAN DIE KURRIKULUM VIR FINANSIËLE REKENINGKUNDE BY 'N OOP E-AFSTANDSLEERINSTELLING IN SUID-AFRIKA

Vir die een-en-twintigste-eeuse kennisekonomie is intellektuele vaardighede (soos kritiese denke) geïdentifiseer as noodsaaklik vir sukses. Opvoedkundige instellings het 'n verantwoordelikheid om studente met die kennis en vaardighede toe te rus wat nodig is vir toekomstige indiensneming. Die Suid-Afrikaanse Instituut vir Geoktrooieerde Rekenmeesters het kritiese denke geïdentifiseer as 'n vaardigheid wat studente in Finansiële Rekeningkunde, wat geoktrooieerde rekenmeesters wil word, moet ontwikkel.

Vir hierdie verhandeling van beperkte omvang, is 'n kwalitatiewe studie gedoen deur 'n konstruktivistiese paradigma toe te pas op 'n gevallestudie-ontwerp om die ontwikkeling van kritiese denke in eerstejaarstudente in Finansiële Rekeningkunde in 'n oop e-afstandsleerkonteks in Suid-Afrika te ondersoek. Om hierdie doel te bereik, is data versamel deur semi-gestruktureerde onderhoude te voer met twaalf akademië en dokumentontleding te gebruik.

Omdat die studie beperk was tot twee eerstejaar finansiële rekeningkunde modules, wat deel vorm van die Suid-Afrikaanse Instituut vir Geoktrooieerde Rekenmeesters se geakkrediteerde program wat by 'n oop e-afstandsleerinstelling aangebied word, kan die bevindinge nie veralgemeen word nie. Alhoewel die studente se persepsies nie in die studie in ag geneem is nie, bied die bevindings waardevolle insig oor die ontwikkeling van kritiese denke in rekeningkundemodules.

Die bevindings dui daarop dat, alhoewel akademië glo dat vaardighede in kritiese denke en goeie denkgewoontes in die eerste jaar van Finansiële Rekeningkunde onderrig moet word, word dit tans slegs deur 'n inhoudgebaseerde benadering

gedoen, of glad nie. Verder word slegs tegnologieë geïnkorporeer waarmee akademië gemaklik is, hoofsaaklik vir die oordrag van die inhoud. Die aanbevelings vir kurrikulumevaluering en professionele ontwikkeling hou spesifiek verband met hierdie bevindings.

SLEUTELTERME

Rekenmeesters, Bloom se taksonomie, kritiese denke, vaardighede van kritiese denke, afstandsonderrig, Finansiële Rekeningkunde, eerstejaarstudente, goeie denkgewoontes, aanlyn leer, sosiale konstruktivisme, *ubuntu*

MANWELEDZO

HJ Dry

Nomboro ya mutshudeni 34580395

Dzina la desithesheni:

MVELEDZISO YA VHUKONI HA U HUMBULA NGA NDILA YO DZUDZANAHO KHA NWAHA WA U THOMA WA KHARIKHULAMU YA AKHAUNTHINI YA MASHELENI KHA TSHIIMISWA TSHA U GUDA U KULE NGA LUBUVHISIA AFRIKA TSHIPEMBE

Kha ikonomi ya ndivho ya danwaha fumbili nthihi, zwikili zwa ndivho (zwi ngaho vhukoni ha u humbula nga ndila yo dzudzaneaho) zwo topolwa sa ndaela ya mvelaphanda. Zwiimiswa zwa pfunzo zwi na vhudifhinduleli u lugisela matshudeni nga ndivho na zwikili zwine zwa todea mishumoni ya tshifhingani tshidaho. Tshiimiswa tsha Afrika Tshipembe tsha Vhomakone vha Akhaunthini tsho topola vhukoni ha u humbula nga ndila yo dzudzaneaho vhune ha tea u bveledzwa kha matshudeni a Akhaunthini ya Masheleni vhane vha tama u vha vhomakone vha muvhalelano.

Ho itwa ngudo dza khwalithathivi dza desithesheni ya tshikoupu tsho pimiwaho, hu tshi khou u fhatwa ndivho na kupfesesele nga kha tshenzhemo kha u bveledza ngudo, u wanulusa vhukoni ha u humbula nga ndila yo dzudzaneaho kha nwaha wa u thoma kha matshudeni a Akhaunthuni ya Masheleni kha nyimele ya tshiimiswa tsha u guda u kule na kha lubuvhisia Afrika Tshipembe. U swikelela izwi, data yo kuvhanganyiwa nga kha inthaviwu dzo dzudzanywaho na vhoraakademi vha fumimbili na u shumisa musaukanyo wa linwalo.

Sa musu ngudo yo vha yo sedza fhedzi kha mimodulu mivhili ya nwaha wa u thoma ya Akhaunthini ya masheleni ine ya vhumba tshipida tsha mbekanyamushumo ya akhiredithesheni ya Tshiimiswa tsha Afrika Tshipembe tsha Vhomakone vha Akhaunthuni ine ya funzwa kha tshiimiswa tsha u guda u kule na kha Lubuvhisia, mawanwa a nga si angaredzwa. Ngeno kuvhonele kwa matshudeni ku songo dzhielwa ntha kha ngudo, mawanwa o netshedzwa ndivho ya ndeme kha mveledziso ya vhukoni ha u humbula nga ndila yo dzudzaneaho kha mimodulu ya akhaunthini.

Mawanwa o dzumbulula uri, naho vhoraakademi vha tshi tenda uri zwikili zwa vhukoni ha u hambula nga ndila yo dzudzaneaho na maitete a kuhumbulele kwavhudi zwi fanela u bveledziswa kha n'waha wa u thoma wa matshudeni vha Akhaunthini ya Masheleni, zwa zwino zwi khou itwa fhedzi nga kha maitete o disendekaho nga zwi re ngomu, kana zwa sa itwe na luthihi. Zwi tshe zwo ralo, ndi thekhinolodzhi fhedzi dzine vhoraakademi vha takalela u dzi shumisa, zwo tanganyiswa, nga maanda ndisedzo ya zwi re ngomu. Themendelo dzo itwa kha u ela kharikhulamu na mveledziso dzi re na vhushaka na mawanwa anea o tiwaho.

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Akhaunthini, Bloom's taxonomy, vhukoni ha u hambula nga ndila yo dzudzanyaho, zwikili vhukoni ha u hambula nga ndila yo dzudzanyaho, pfunzo ya u guda u kule, Akhaunthini ya Masheleni, matshudeni vha n'waha wa u thoma, maitete avhudi a kuhumbulele, u guda kha lubuvhisia, u fhat'a matshilisano, vhuthu

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ABBREVIATIONS AND ACRONYMS

AICPA	American Institute of Certified Public Accountants
APA	American Philosophical Association
BHS	British Home Stores
CA	chartered accountant
CAQDAS	Computer-Assisted Qualitative Data Analysis Software
CEDU	College of Education
CTA	Certificate in the Theory of Accounting
DHET	Department of Higher Education
HE	higher education
IAESB	International Accounting Education Standards Board
IC	independent coder
IESBA	International Ethics Standards Board for Accountants
KPMG	Klynveld Peat Maverick and Goerdeler
LU	learning unit
MCQ	multiple-choice question
NPC	National Planning Commission
ODeL	open distance and e-learning
ODL	open distance learning
OECD	Organisation for Economic Co-operation and Development
PwC	PricewaterhouseCoopers
RPSC	Research Permission Subcommittee
SA	South African
SAICA	South African Institute of Chartered Accountants
SDG	Sustainable Development Goals

sms	short messaging service
SRIPCC	Senate Research, Innovation, Postgraduate Degrees and Commercialisation Committee
UNESCO	United Nations Educational, Scientific and Cultural Organization
Unisa	University of South Africa

CHAPTER 1

ORIENTATION AND BACKGROUND

1.1 INTRODUCTION

“In professional education, it is insufficient to learn for the sake of knowledge and understanding alone” (Schulman, 2005:18). The knowledge economy of the twenty-first century requires great reliance on intellectual skills due to the increase of production and services based on knowledge, which subsequently contributes to the acceleration in technical and scientific developments (Powel & Snellman, 2004:199). Already in the twentieth century, Knowles (1980:28) proclaimed that the facts learned by individuals during their youth will either become insufficient or be proved untrue, and the skills obtained will become obsolete due to the emergence of new technologies. These rapid changes in technology have caused many professions to rethink their future – and especially how to stay relevant (Rotherham & Willingham, 2009:18; Saavedra & Opfer, 2012:8; Stuart & Dahm, 1999:1–5). This also applies to the education sector where universities are now facing challenges to adopt new ways of teaching that would –

- develop the knowledge and skills of the future workforce;
- effectively manage the increase in student numbers;
- develop pedagogy suitable for diverse student populations; and
- deal with the variety of delivery modes (see section 2.3.1), which are now possible (Bates, 2015:36).

The University of South Africa (Unisa) responded to these changes and challenges through the acceptance of a framework for the implementation of an open distance learning (ODL) model in 2010 (Subotzky & Prinsloo, 2011:190). Management then proceeded to prepare the Unisa 2016–2030 strategic plan, which emphasises the important role of technologies by including strategies to transform Unisa into an open distance e-learning (ODeL) university that would be relevant within the African context, and which will relate to the vision statement of Unisa, namely “[t]he African university shaping futures in the service of humanity” (Unisa, 2016c:8). Being an African

university not only speaks of the geographical context of the institution but also emphasises the importance of the African philosophy, methodology and content that should take centre stage in the modules offered to students. The African philosophical worldview of *ubuntu*¹ has been explored as a possible foundation for teaching, learning, student support and assessment practices at Unisa (Letseka, 2016:32). The management of Unisa decided to promote a student-centred approach to teaching and learning activities guided by the principles of social constructivism (Heydenrych, 2010:5). Constructivist pedagogies are student-centred with the focus on the learning of individual students or students as a group (Harasim, 2012:96). Back in 1930 already, Vygotsky explained how one learns through interaction with others and therefore one can align these principles with communalism, which forms an integral part of the African philosophy (Venter, 2004:153). This transformation and shift in pedagogical viewpoint created the opportunity to review various aspects of the curriculum of existing qualifications at Unisa, and to incorporate technologies that would assist with the facilitation of learning and the development of new skills.

Due to the rapid changes in technology – and with specific reference to the fields of accountancy and business, as well as the possibility of future professional obsolescence – both existing and future accounting professionals would require “broader exposure to business and development of business acumen; critical thinking skills, problem-solving in an increasing complex environment, emotional quotient, and enhanced communication skills” (Chartered Accountants Worldwide, 2017:12). Training students should therefore include exposure to these business skills to prepare them for future employment. Paul and Elder (2005:7) are of the opinion that instructors do not always encourage the development of critical thinking skills due to their own lack of knowledge on thinking and teaching strategies. It is imperative that academics in the accountancy field take cognisance of these requirements and adapt the accounting programmes accordingly. Academics need to understand the skills students should develop and how best to develop them through the teaching and learning activities included in the curriculum of accounting programmes. This study therefore set out to explore how the concept of critical thinking is developed in the first-

¹ The essence of *ubuntu* could be expressed as “I am, because we are, and since we are, therefore I am” (Mbiti, 1969:106) (refer section 2.4.1).

year financial accounting curriculum at an ODeL institution in South Africa, whilst taking into consideration the use of technology and the African philosophy of *ubuntu*.

The written curriculum of modules is usually very specific and indicates the content, goals, objectives, sequence² as well as the learning activities to be mastered (Glatthorn, Boschee, Whitehead & Boschee, 2011:12). For the purpose of this study, the written curricula of two first-year financial accounting modules – FAC1502 (Financial Accounting Principles, Concepts and Procedures) and FAC1601 (Financial Accounting and Reporting) – were evaluated to determine the aspects, which promote the development of critical thinking. The written curricula of these two modules comprised the study guides (one per module), tutorial letters (containing compulsory assignments), past examination papers and a prescribed textbook. The educational objectives students should achieve in the modules are included in the study guides, whereas the objectives that are assessed can be derived from the compulsory assignments and past examination papers provided to students. Since this study focused on critical thinking skills, the revised taxonomy of Bloom – as created by Anderson and Krathwohl (2001) – was used to evaluate the educational objectives stated in the study guides, compulsory assignments and past examination papers (hereafter referred to as ‘the relevant study material’) of the FAC1502 and FAC1601 modules.

A taxonomy of educational objectives aims to categorise acts of thinking that result from educational experiences (Dwyer, Hogan & Stewart, 2014:44). Bloom’s taxonomy (Krathwohl, Bloom & Masia, 1964), consisting of six hierarchical levels (knowledge, comprehension, application, analysis, synthesis and evaluation) was one of the first taxonomies to be developed in education (Dwyer et al., 2014:44–45). According to Krathwohl (2002:212), Bloom aimed to create a common language that could be used to set educational objectives across various academic fields and levels of study.

² Financial accounting can be described in terms of the accounting cycle. The accounting cycle describes a series of events that, when completed, lead to financial information. This entails that a transaction takes place – for example purchasing an item. A source document is issued as proof of the transaction taking place. The information on the source document is then recorded in the applicable subsidiary journal. At the end of the month, all the balances in the subsidiary journals are then posted to the general ledger. At the end of a reporting period (usually once per annum for external users), all the balances in the general ledger are summarised in a trial balance. The information in the trial balance is then used to compile the financial statements. First-year financial accounting modules at Unisa are compiled to follow the sequence of these events while teaching students various concepts.

Krathwohl (2002:213) recognised the fact that, when an objective is set, using a noun, it refers to content matter but when changing it to a verb, it refers to the cognitive process.

This chapter consequently provides a brief overview of the context of the study (see section 1.2.1), the future of the accountancy profession (see section 1.2.2) and the teaching of financial accounting at Unisa (see section 1.2.3). Following this background, the problem statement (see section 1.3), the research questions (see section 1.4) and the aim of the study (see section 1.5) are discussed. The chapter also provides an explanation of the research design (see section 1.6) and methods used in this study (see section 1.7), ethical measures of the research (see section 1.8), trustworthiness of the research (see section 1.9), clarification of concepts (see section 1.10) as well as a division of the chapters in this dissertation (see section 1.11).

1.2 BACKGROUND AND CONTEXTUALISATION OF THE STUDY

Within the South African (SA) context, Unisa is the largest distance education institution as well as the only distance education institution accredited by the South African Institute of Chartered Accountants (SAICA) to train future chartered accountants (CAs) (SAICA, 2017). In order to become a chartered accountant (CA), one should firstly enrol at a SAICA-accredited university for a SAICA-accredited degree programme. Secondly, one should complete a Certificate in the Theory of Accounting (CTA) (or equivalent qualification) (SAICA, 2018b). Thirdly, prospective candidates studying full-time should complete a three-year training contract at a registered training office whereas a candidate studying part-time should complete a five-year training contract (SAICA, 2018b). There are also two board examinations that have to be completed successfully (SAICA, 2018b). The first examination can be written after successful completion of the CTA year, and the second examination can be written after completion of eighteen months of one's three-year training contract (SAICA, 2018b).

Students are being taught high levels of technical knowledge based on SAICA's competency framework (SAICA, 2017). In addition, the competency framework sets out professional skills and attributes that future CAs in South Africa should possess (SAICA, 2017). It is the responsibility of all SAICA-accredited universities (including

Unisa) to teach and assess the technical knowledge and pervasive skills included in the SAICA framework (Terblanche, 2019:6). The framework is descriptive in nature, resulting in the encouragement to utilise innovative methods of teaching and assessment (SAICA, 2017:5–14) (See Table 2.1). Numerous calls have been made for the inclusion of skills development in education (Organisation for Economic Co-operation and Development [OECD], 2018:5–6; Willingham, 2007:8; World Bank Group, 2016:10) but these calls have mostly been ignored in accountancy education in South Africa.

1.2.1 Context of this study

The delivery of distance education has always been associated with technology (especially transportation and communication), and teaching and learning should therefore adapt and grow along with new developments in technology (Keegan, 2013:7–8). The development of distance education has been divided into five generations based on technological development, namely correspondence education, radio and television broadcasting, a systems approach, telelearning and e-learning (Moore & Kearsley, 2012:23–42). In developing countries, basic technologies, for example printed study material and even radio and television broadcasts, are used, whereas developed countries are more likely to use computers and the internet to develop and distribute educational resources (Moore & Kearsley, 2012:15–16). Although the digital landscape in developing countries is changing with almost 70% of the bottom 20% of the population in these countries owning a mobile phone, less than 60% of the global population can benefit from the digital revolution (World Bank Group, 2016:2–3). In developing countries, such as South Africa, careful consideration should be given to the use of technologies for educational purposes in order not to alienate students from educational opportunities (Prinsloo, 2019:67; World Bank Group 2016:2). Unisa is committed to advancing social justice (Unisa, 2018c:1), and therefore it is not surprising that the institution is making use of technologies suitable for their student demographics (for example printed study material) (Unisa, 2016a:5; 2018c:2). The management of Unisa is however also aware of the fact that the institution should equip students with the knowledge and skills they would require to contribute to the knowledge society of the twenty-first century (Unisa, 2016c:4). In March 2020, the COVID-19 pandemic forced the total shutdown of almost all sectors

in South Africa (Hedding, Greve, Breetzke, Nel & Jansen van Vuuren, 2020:1). As ODeL institution, Unisa was compelled to expedite its move towards e-learning by overcoming barriers, such as traditional sit-down venue-based examinations (Hedding et al., 2020:1). All teaching and learning activities were moved online, and academics had to re-evaluate curriculums where technology is utilised to deliver instruction with the focus on problem solving and critical thinking (Hedding et al., 2020:1). This pandemic once again emphasised that careful consideration should always be given when instruction is designed to make use of suitable technologies as delivery vehicles of content or platforms for collaboration.

Unisa positioned itself as an African university (Unisa, 2016c:8) and therefore the effect of African philosophy should be considered. *Ubuntu* provides a moral framework that could be used in our learning environments since it represents core human values, for example respect (Letseka, 2016:5). It is in these values that one finds principles from where a learning environment conducive to the development of critical thinking is possible (Akinola & Uzodike, 2018:95; Dyson & Brice, 2016:109). Respect when others in a learning community share their ideas (Enslin & Horsthemke, 2016:182) could, for example, lead to the development of valuing the opinion of others, which forms part of critical thinking (Facione, 1990:13).

Critical thinking as concept consists of two pillars, namely critical thinking skills and good thinking habits (dispositions) (Facione, 1990:2–13). In order to become a critical thinker, it is important that both pillars of critical thinking should be developed (Facione, 2015:10; Halpern, 1998:452). One could, for example, memorise certain techniques to analyse data, but without reflection on what one has done or what the facts mean, no critical thinking can take place. Critical thinking is developed through student-centred approaches, for example problem-based learning (Savery, 2006:12).

The ODL framework of Unisa requires a flexible, student-centred approach to teaching and learning. The educational philosophies – progressivism and reconstructionism – are flexible and student-centred (Ornstein, 1991:106). Progressivism focuses on the student as a whole and promotes thinking and problem-solving skills within a context relevant to each student (Erkilic, 2008:3–4). Reconstructionism is concerned with the preparation of students to create an improved society by addressing social, economic and political questions (Erkilic, 2008:4). Progressivism could be used to develop the

critical thinking skills of students by addressing the diverse individual needs, while reconstructionism could assist students to consider possible solutions for economic, social and political problems in order to change and improve society in future. For the purposes of this study, both progressivism and reconstructionism were important. In the context of this study, financial accounting students could, for instance, consider problems relating to unemployment, corporate social responsibility and provision for retirement.

1.2.2 The future of the accountancy profession

In the wake of scandals involving the accountancy profession (i.e. Enron, General Electric, Carillion and the Gupta family), it has become imperative that accounting professionals must have the ability to think critically, especially when it comes to judgemental aspects (Plender, 2018). Accounting professionals have a responsibility to serve and protect the public interest in the midst of a rapidly changing, technologically advanced knowledge society (Boyce, 2014:549; Chartered Accountants Worldwide, 2017:7; Cunningham, 2014:410; SAICA, 2017:31–33). The development of technology over the past decades has seen many of the so-called day-to-day activities of accounting professionals being automated (Accounting Weekly, 2018; Chartered Accountants Worldwide, 2017:10). Analysing and evaluating data and risks, spotting outliers,³ exceptions and trends as well as providing strategic advice based on these are becoming especially important aspects of the service delivery of accounting professionals (Accounting Weekly, 2018; Barac, 2009:68–69; Chartered Accountants Worldwide, 2017:10–11). Creative and critical thinking skills could assist accounting professionals in accomplishing the aforementioned tasks effectively (Barac, 2009:68–69; Cunningham, 2014:401; Doney, Lephardt & Trebby, 1993:297; Van Laar, Van Deursen, Van Dijk & De Haan, 2017:578; Young & Warren, 2011:860).

The accounting profession responded through various accounting professional bodies, communicating the importance of critical thinking skills for the future of the profession and the development of these skills through accounting education

³ An outlier in data is a datapoint that significantly deviates from the normal pattern of a specific data set (Khan Academy, 2020).

(International Accounting Education Standards Board [IAESB], 2018:20, 24, 33, 49, 58, 72; International Ethics Standards Board for Accountants [IESBA], 2018b). It is therefore not surprising that SAICA included critical thinking and problem-solving skills in their competency framework (SAICA, 2017:42–44). The SAICA competency framework was first introduced in 2010, after which multiple improvements and revisions have been added leading to the tenth version that came into effect in January 2019 (SAICA, 2017:1, 5). The competency framework describes the exit-level skills that are expected from a newly qualified CA (SAICA, 2017:42–43). Currently, the existing competency framework is being reviewed as part of the CA2025 project (see <https://ca2025.co.za/ca2025/> for more information) and a new draft framework was published for comments on 20 March 2020 (SAICA, 2020:1). Similar to the current competency framework (SAICA, 2017), the new draft competency framework only describes the entry-level competencies of newly qualified CAs and thus the exit-level competencies to be reached after formal education and training contracts (SAICA, 2020:1). The question therefore remains how the academe could assist in developing these skills at various levels of the qualification process (see Table 2.1).

1.2.3 Teaching of financial accounting at Unisa

Students who are interested in becoming a CA and who want to study at Unisa must enrol for the Bachelor of Accounting Sciences in Financial Accounting degree (Unisa, 2018b). This three-year degree includes various financial accounting modules. FAC1502 (Financial Accounting Principles, Concepts and Procedures) and FAC1602 (Financial Accounting and Reporting) are the two first-level modules followed by FAC2601 (Financial Accounting for Companies) and FAC2602 (Selected Accounting Standards and Simple Group Structures) at the second level. FAC3701 (General Financial Reporting), FAC3702 (Distinctive Financial Reporting), FAC3703 (Specific Financial Reporting) and FAC3704 (Group Financial Reporting) are covered at the third level (Unisa, 2019a). The scope of the present study was limited to the two first-level financial accounting modules, FAC1502 and FAC1602.

The purpose of the FAC1502 module is to provide students with foundational knowledge of financial accounting, such as fundamental concepts, standards and principles. Students completing this module should have an informed understanding of –

- the collection, processing and recording of relevant financial accounting data;
- preparing financial statements of sole proprietors and non-profit organisations; and
- the accounting treatment and disclosure of non-current and current assets, as well as non-current and current liabilities (Unisa, 2019c).

The purpose of the FAC1601 module is to enable students to apply various accounting theories, methods and techniques, based on the SAICA conceptual framework (SAICA, 2017) relating to the financial statements of trading, service and manufacturing entities, which are trading as partnerships and close corporations (Unisa, 2019b).

Unisa developed the e-learning environment of the institution, *myUnisa* (the Unisa learning management system), on the Sakai platform (Meadon, 2015). The tools on *myUnisa* that are available for instructors include: welcome messages, announcements, blogs, calendars, course contacts, short messaging service (sms) messages, discussion forums, Drop Box, Wiki, meetings, podcast, polls and syllabus (Letseka, Letseka & Pitsoe, 2018:131). In order to further assist students, the possibility exist to present discussion classes to students, and students are also provided with a choice to receive assistance from face-to-face tutors and/or e-tutors in accordance with Unisa's integrated tutor model (Letseka et al., 2018:131).

Both FAC1502 and FAC1601 were developed for distance education and are currently taught online using various online learning tools available on *myUnisa* (Letseka et al., 2018:130; Unisa, 2019b; 2019c). Students are provided with one printed study guide, tutorial letters and various past examination papers for both these modules, whilst electronic copies of all these documents are also available on *myUnisa*. The academics teaching FAC1502 created online lessons on *myUnisa* for each learning unit and included videos containing explanations and examples of the most important topics. On FAC1601, the academics presented a class that was broadcast live to students, and the recording of this class has been made available to all students on *myUnisa*. The students on FAC1502 and FAC1601 have access to both face-to-face and e-tutor services when needed in support of their studies.

1.3 PROBLEM FORMULATION

Although the SAICA conceptual framework provides a description of the exit-level critical thinking skills that are important to the profession (SAICA, 2017:42–43), the responsibility to teach these skills are the responsibility of the SAICA-accredited providers (Terblanche, 2019:6). Since the framework only describes the exit-level skills needed before qualifying as a CA, it means that academics have not received any indication of the skills that should be developed at each level of the qualification. It is therefore necessary to determine the aspects of critical thinking that should be developed in each module in order to reach SAICA's exit-level criteria.

Educational taxonomies provide academics with guidelines to set educational objectives for learning activities and assessments. Anderson and Krathwohl's (2001) revision of Bloom's taxonomy provides a framework for the setting of objectives that could be classified from lower-order thinking to higher-order thinking. The taxonomy provides a framework that could be utilised to categorise the educational objectives set for a module (Maree & Fraser, 2008:69; Wilson, 2001:4) from where the level of integration of critical thinking skills into the written curriculum can be identified.

The present study set out to determine the aspects of critical thinking that are integrated into the first-year financial accounting curriculum as well as how these skills and thinking habits are being developed. The perceptions of academics in terms of what constitutes the desired level of critical thinking skills and habits as outcome on first-year accounting modules, how it could be integrated into the first-year financial accounting curriculum when utilising technology and applying African philosophy were also determined. The study contributes to the literature, and the results could be used to make recommendations regarding integration of critical thinking skill development into the curriculum of not only FAC1502 and FAC1601, but also other first-year financial accounting modules.

1.4 RESEARCH QUESTIONS

In order to explore how the current first-year financial accounting curriculum at a South African (SA) ODeL institution promotes the development of various aspects related to the concept of critical thinking whilst taking into consideration the use of technologies

and the African philosophy of *ubuntu*, the following research question was set to be answered:

How is critical thinking developed in the current first-year financial accounting curriculum at a South African ODeL institution?

From this central research question, the following sub-questions emerged:

- Which critical thinking skills should be developed in first-year financial accounting?
- How are critical thinking skills developed in the first-year financial accounting curriculum?
- Which thinking habits should be developed to enable first-year financial accounting students to become critical thinkers?
- How could the principles of the African philosophy of *ubuntu* be applied to assist with the development of critical thinking skills and good critical thinking habits?
- How is technology utilised to assist with the development of critical thinking skills and critical thinking habits?

1.5 AIM OF THE RESEARCH

The study set out to explore how critical thinking is developed through the first-year financial accounting curriculum at an ODeL institution in South Africa.

The objectives of the study were as follows:

- to determine which critical thinking skills should be developed in first-year financial accounting;
- to determine how critical thinking skills are developed in the first-year financial accounting curriculum;
- to determine which thinking habits should be developed to enable first-year financial accounting students to become critical thinkers;
- to determine how the principles of the African philosophy of *ubuntu* could be applied to assist with the development of critical thinking skills and thinking habits; and

- to determine how technology is utilised to assist with the development of critical thinking skills and thinking habits.

1.6 RESEARCH DESIGN

The research design refers to the specific approach that the researcher chooses to follow from the first draft problem statement, to arriving at the research questions, the collection and analysis of the data and up to where the findings are reported (Creswell & Poth, 2018:5). Through this study, the researcher set out to determine how the development of critical thinking skills takes place by way of the first-year financial accounting curriculum (see section 1.4). Furthermore, the researcher aimed to determine whether a need exists for further development and research in this area. An interpretive framework, namely the social constructivist paradigm, was chosen for the purpose of this study. The social constructivist research paradigm (also known as an interpretivist paradigm) allows the researcher to explore and make meaning from a variety of lived experiences and therefore uncover the complexity of views rather than narrowing the meaning (Creswell & Poth, 2018:24). A social constructivist paradigm was chosen since the unique SA historical context and attributes of financial accounting subject matter combined with the practical implications of teaching at an ODeL institution in a developing country should be accounted for.

A qualitative approach was followed for the purposes of the study, since qualitative research could attend to the “contextual richness” (Yin, 2016:3) of the setting, people and academic writings involved. A case study design was chosen for this research since it allows for the in-depth investigation of a specific case within its real-life context, especially when the boundaries between the subject under investigation and the context are blurred (Yin, 2014:17). A case study design affords the researcher the ability to collect data from multiple sources in order to validate the data and to gain an in-depth understanding of the subject under investigation (Yin, 2014:119). The research design is described in more detail in section 3.3.

1.7 RESEARCH METHODS

The research methods relate to the research design and were chosen based on the problem under review. For the present study, a social constructivist research paradigm was chosen as part of the design and therefore semi-structured interviews was chosen

as primary data collection method. The reason for this choice was that it allowed the researcher to gather data based on the lived experiences of participants (Creswell & Poth, 2018:24). Creswell and Poth (2018:8) state that the qualitative researcher collects data in the “natural setting” of the object of the study. Unisa was the natural setting of the case study used in the present research. The participants were thus Unisa staff members, and the documents were created by Unisa staff members for specific modules presented at Unisa. Since data triangulation can be achieved through using multiple sources of data (Fischer & Van de Bovenkamp, 2019:110), analysis of the relevant study material was chosen as secondary data collection method. The following subsections discuss the selection of participants, data collection and data analysis.

1.7.1 Selection of participants

When conducting case study research, a variety of possibilities for purposive sampling exist that the researcher could use (Creswell & Poth, 2018:100). Data collection activities are aimed at gathering good quality data and thus it is important to consider the most appropriate sampling strategy for the research project (Creswell & Poth, 2018:148). For the purpose of the present research study, the modules to include were identified first, after which prospective participants were identified.

The FAC1502 and FAC1601 modules were chosen since these are the first-year financial accounting modules forming part of the SAICA-accredited programme. These modules are therefore the first two modules where skills development of students should commence in order to reach the exit-level skills indicated in the SAICA competency framework. The participants in this study were identified through their involvement in the creation, teaching and decision-making roles regarding the written curriculum or implemented curriculum for FAC1502 and FAC1601. This was important, since the research questions could only be answered by participants with an in-depth knowledge of the module content and the context (learning environment and student profiles) of these modules. In addition, lecturers teaching the second-year financial accounting modules (FAC2601 and FAC2602) were included, since they can contribute to the critical thinking skills they expect students to have once they enrol for the second-year financial accounting course. The academics were identified through the departmental list indicating staff allocated to each module (see section 3.4.1).

1.7.2 Data collection

A literature review of books, articles in academic journals and websites of professional bodies as discussed in Chapter 2 formed the basis of theory from where interview questions could be created and document contents could be analysed. The primary data collection method was semi-structured interviews conducted with participants (see section 1.7.2.1) supplemented by an analysis of the written curriculum of FAC1502 and FAC1601 (see section 1.7.2.2). The various data collection activities pertaining to this study are discussed in detail in Chapter 3 (see section 3.4.2).

1.7.2.1 Interviews

An interview can be used to collect data in terms of someone's expressed beliefs, viewpoints or personal experiences (Yin, 2016:138) and is therefore ideal to employ together with the data collected through literature and the written module documents. The information obtained through the semi-structured interviews was used to explore the complexity of views in order to gain an understanding of the context in which critical thinking skills and good thinking habits are being developed in order to interpret the written curriculum accordingly. This is in line with interpretive research where the research questions are concerned with the description of personal views and experiences of people who are associated with the research object (Magnusson & Maracek, 2015:35). People who are fulfilling different roles within an organisation or team and who are from different backgrounds usually have different experiences and therefore hold different views (Magnusson & Maracek, 2015:35; Schreirer, 2018:84; Taylor, DeVault & Bodgan, 2016:108). The constructivist researcher relies on the views of the participants and makes meaning of the research object based on the complexity of views (Creswell & Poth, 2018:24). Interviews are therefore used as the primary data collection method (see section 3.4.2.1).

1.7.2.2 Document analysis

Documents are a valuable source of data in case study research (Swanborn, 2010:73). According to Bowen (2009:29), document analysis plays a significant role in data triangulation. Data triangulation is one aspect a researcher could consider in order to improve the credibility of a research project (see section 3.5.1). In research studies, documents are used to assist the research to "uncover meaning, develop

understanding and discover insights” pertaining to the research questions (Bowen, 2009:29). The documents chosen for this study contained the educational objectives included in the written curriculum and therefore presented the researcher with the opportunity to gain an understanding of what is expected of students regarding critical thinking skills. For the purpose of this study, documents were used to supplement data gathered through the interviews. The tutorial matter for FAC1502 and FAC1601 was requested from the academics responsible for the modules.⁴ The educational objectives from each learning unit in the study guide, each question from the compulsory assignments and past examination papers were identified and copied into separate documents for each module from where the data were analysed (see section 3.4.2.2).

1.7.3 Data analysis

Content analysis was performed through a directed approach. With directed content analysis, existing theory guides the identification of the initial codes (Hsieh & Shannon, 2005:1281). This data analysis method was used in terms of both the interview data and specific selections of the relevant study material.

The data gathered through the interviews were analysed using the categories of Bloom’s revised taxonomy (Anderson & Krathwohl, 2001) as an initial framework for coding. The researcher (first coder) created an initial codebook based on the conceptual framework (see section 2.7), and an external expert (independent coder) in qualitative research, skilled in coding, acted as second coder. “Directed content analysis” coding (Hsieh & Shannon, 2005:1281) was used, which allowed for theory–concept-driven coding. ATLAS.ti software was used to analyse and integrate data from where the independent coder (IC) interpreted the data. By using content analysis in a qualitative study, the researcher is provided with freedom to decide between the level of analysis whilst developing categories and themes; when using thematic analysis, themes are considered to be latent content (Vaismoradi & Snelgrove, 2019). In the present study, a deductive process was employed to reduce the data into workable themes (Saldaña 2016) (see section 3.4.3.1). The researcher used the frequency of

⁴ The academic responsible for each module has to manage all activities and administration required. This includes dividing the workload amongst team members and ensuring the quality of work completed.

codes within the data as guidance to determine the themes whilst keeping in mind that important findings may also come from less frequent codes (Vaismoradi & Snelgrove, 2019).

The educational objectives in the relevant study material of FAC1502 and FAC1601 were analysed using Bloom's revised taxonomy created by Anderson and Krathwohl (2001) (see section 3.4.3.2). In order to ensure trustworthiness of the research findings, the researcher made use of existing word lists categorising various verbs (Ferlazzo, 2009; Heer, 2015:2, 3; Stanny, 2016:5) according to Bloom's revised taxonomy (Krathwohl, 2002:216). The analysis of the relevant study material is discussed in more detail in section 3.4.3.2.

1.8 ETHICAL MEASURES

It is important to consider possible ethical issues that might arise during the planning and design phases of a research project (Creswell & Poth, 2018:53). These considerations include obtaining permission to conduct research, protection of data, and taking precautions to protect the personal information of participants (Creswell & Poth, 2018:55). Although research ethics are taken into account during the planning and design phase of the research, the researcher's task regarding ethical research is not completed. Throughout the entire project, the researcher should continuously reflect upon research ethics in order to ensure that no harm is caused, data are analysed objectively and findings are reported honestly (Creswell & Poth, 2018:54–55).

This research project had a low risk of causing any harm to any of the participants. The participants were required to sacrifice approximately 45 minutes of their time during office hours. When conducting interviews, it is important to create an environment where participants feel as comfortable as possible (Creswell & Poth, 2018:164). Participants were therefore offered a choice to be interviewed either in their own offices or in the office of the researcher. The participants might have experienced some discomfort, since the interview questions were not e-mailed to them beforehand. This meant these participants were not able to prepare answers for each question before the interview and therefore might not have been able to answer the question on the spot. The use of semi-structured interviews, however, allowed the participants

to ask questions for clarification purposes and the researcher could rephrase the question when needed. Furthermore, the participants were provided with a participant information sheet, providing them with broad information regarding the topic of the interview (Taylor et al., 2016:35), obtaining their consent beforehand (Creswell & Poth, 2018:165; Flick, 2018:88), and assuring them of anonymity (Flick, 2018:91). Participants were also informed that they could withdraw from the interview at any time without any negative consequences.

Since this research project involved Unisa data and employees, a request for ethical clearance was submitted by the supervisors to the representative at the College of Education (CEDU) (Unisa, 2016b:9). Ethical clearance was first obtained from the College Research Ethics Review Committee (see Annexure B) and thereafter from the Unisa Research Ethics Review Committee (see Annexure C) (Unisa, 2016b:11).

1.9 TRUSTWORTHINESS

Trustworthiness entails that the researcher needs to persuade the audience that the findings from the project is worth taking note of (Lincoln & Guba, 1985:290). In order to achieve trustworthiness, a qualitative researcher needs to adhere to the criteria for trustworthiness, namely credibility, transferability, dependability and conformability (see section 3.5) (Lincoln & Guba, 1985:219). Triangulation was used to ensure validity (Korstjens & Moser, 2018:121). Data were collected by way of a literature review, interviews with participants (see sections 1.7.1 and 3.4.2.1) and the analysis of relevant study material (see sections 1.7.2 and 3.4.2.2). The researcher conducted all the interviews and built trust with the participants through honouring anonymity and responding to all questions pertaining to the research with honesty and transparency. To ensure credibility, all aspects pertaining to the research process – including the methodology, sampling and data analysis – were documented thoroughly. All data, notes and analyses will be kept for a period of five years after completion of the research should it be necessary for the trustworthiness of the findings to be verified.

1.10 CLARIFICATION OF CONCEPTS

To ensure a common understanding and a frame of reference, working definitions for the following key concepts and terms are given below.

→ **African philosophy of *ubuntu***

The African philosophy of *ubuntu* represents the core values of humanness, namely respect, dignity, generosity, obedience, humility, solidarity, caring, benevolence, hospitality, interdependence and communalism or altruism (Kamwangamalu, 1999:25–31; Letseka, 2016:5; Msila, 2008:70; Sambala, Cooper & Manderson, 2019:5). It therefore provides a “value system” that guides the behaviour of individuals in communities (Idoniboye-Obu & Whetho, 2013:230).

→ **Critical thinking**

Critical thinking is purposeful, self-regulatory judgement (Facione 1990:2), resulting in a process of active conceptualisation, application, analysis, synthesis, and/or evaluation (SAICA, 2017:42) as well as interpretation and inferences (Facione, 1990:2). Critical thinking is evidence-based and the evidence, concepts, methodologies, criteria and contextual considerations leading to accurate and relevant judgement can be explained (Facione 1990:2; SAICA, 2017:42). Critical thinking is a complex concept (Hepner, 2015:68) divided into a cognitive and a disposition dimension (Facione, 1990:4–18).

→ **Distance education**

Distance education is a form of education where the teaching and learning activities are separated (Moore & Kearsley, 2012:2) by time and space (Moore, Dickson-Deane & Gaylen, 2011:129). In order to mediate the gap created by the separation in time and space, communication technologies are used (Moore & Kearsley, 2012:2).

→ **E-learning**

E-learning is a form of education mediated by the use of electronic media, either as add-on in a traditional face-to-face classroom or as fully online transmission of knowledge and interactive learning activities (Guri-Rosenblit, 2005:469).

→ **Open distance learning (ODL)**

ODL is a multi-dimensional concept (Unisa, 2018c:2) that combines the characteristics of open learning and distance education (Ghosh, Nath, Agarwal & Nath, 2012:53).

Since this study took place within the context of Unisa, the definition used by the institution was used as point of reference to define ODL for the purpose of this study. Unisa (2018c:2) defines ODL as:

[A] multi-dimensional concept aimed at bridging the time, geographical, economic, social, educational and communication distance between student and institution, student and academics, student and courseware and student and peers. ODL focuses on removing barriers to access learning, flexibility of learning provision, student-centeredness, supporting students and constructing learning programmes with the expectation that students can succeed.

→ **Open distance and e-learning (ODeL)**

ODeL refers to an ODL model adopted by an institution whilst making use of e-learning for teaching and learning activities.

→ **Open education**

Open education encompasses the belief that all people in the world should be able to openly “produce, share, and build on knowledge” (Opensource.com, 2020).

→ **Open learning**

Open learning describes any form of education aiming to remove barriers between students and education (Rumble, 2005:5). Students are placed in control of their own educational journey as far as possible and could include decisions made on what to study, how to study, when to study, where to study, how to be assessed and who to approach for assistance (Rumble, 2005:5). The openness refers to flexibility and dimensions of openness regarding resources, tools, practices (Open Education Consortium, 2019), access, curriculum or any other elements (Ghosh et al., 2012:53).

→ **Student-centeredness**

Unisa (2018c:3) says about student-centeredness that it –

[R]equires that students are seen as the main foci of the educational process and they are supported to take progressive responsibility for their learning and research. However, the pedagogy employed should:

- enable successful learning through rich environments for active learning,

- establish links between students' current meanings and contexts and new knowledge to be constructed, and
- encourage independent and critical thinking.

→ **Thinking habits**

Thinking habits – also known as dispositions or attitudes of the mind – are a combination of attitudes, intentions, values and beliefs that form an integral part of a person's character (Facione, 2000:63).

1.11 DIVISION OF CHAPTERS

The research report is organised into five chapters. The first chapter presented a general introduction to the study where background information was discussed. Thereafter the problem formulation leading to the research questions and aims was discussed followed by a brief overview of the research design and methods. Consideration was given to ethical measures as well as the trustworthiness of the study before clarifying the most important concepts related to the study.

Chapter 2 provides an overview of existing literature on critical thinking as concept, the aim and principles within an ODL institution and visions and policies relating to skills development. The theoretical framework of the study (*ubuntu* and social constructivism) and the skills required by the accountancy profession are discussed. Thereafter, the educational development of critical thinking, including scaffolding and teaching methods utilising Web 2.0 technologies to create a learning environment whilst applying principles of social constructivism, is considered. The chapter concludes with a visual presentation of the initial conceptual framework created for this study.

The third chapter outlines the research paradigm that informed the study, including the research design and methods. More detail is provided for the case study research, and the data collection methods and instruments are explained. The methodology followed to analyse the data is discussed and more detail is provided regarding the criteria for trustworthiness that were considered. The chapter concludes with a detailed discussion of the ethical measures taken whilst conducting the study.

Chapter 4 provides general participant information and a discussion of the research findings. Firstly, a rationale for the order of the discussion of the research findings is provided after which the findings from the analysis of module documents are presented, followed by a discussion of the themes identified from the interview data.

The last chapter provides an overview of the literature review and empirical study. The synthesis of findings is discussed next, after which conclusions from the findings are discussed. Furthermore, the limitations of this study are discussed followed by recommendations and suggestions for further research.

1.12 CHAPTER SUMMARY

This chapter introduced the study. Background was provided followed by a brief discussion of the context of the study, the future of the accountancy profession and teaching and learning of financial accountancy at Unisa. The problem statement followed, and the argument was made that the SAICA competency framework only indicates the exit-level critical thinking skills required by young accountancy professionals without any guidance on how this should be developed over time. The research questions and aims are subsequently documented followed by a brief introduction to the research paradigm and methodology that were followed. Ethical measures and trustworthiness of the study are considered before concluding with a clarification of important concepts and a chapter outline.

Chapter 2 will provide an overview of existing literature on critical thinking as concept, the aim and principles of an ODL institution and global visions and local policies relating to skills development. This will be followed by a discussion of the theoretical framework of the study and the need for critical thinking skills by the accountancy profession. The educational development of critical thinking, including a discussion of Bloom's revised taxonomy, critical thinking skills and attributes, scaffolding and teaching methods utilising Web 2.0 technologies to create a learning environment whilst applying principles of social constructivism will be presented next. The chapter will conclude with a visual presentation of the initial conceptual framework of this study.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

In Chapter 1, it was noted that the development of critical thinking in the first-year financial accounting curriculum at an SA ODeL institution was the focus of this study. The background and context of this study were provided, leading to the research problem, research questions and research design. This chapter presents findings from the literature review. A literature review was performed (cf. Jesson, Matheson & Lacey 2011:73–76) to gain an understanding of what constitutes critical thinking and how it can be taught whilst applying African philosophical principles in an ODeL environment. The literature review begins with a discussion of the development of critical thinking as concept (section 2.2) followed by a discussion of the ODL context (section 2.3.1) and global visions and local policies on skills development (section 2.3.2). The African philosophy of *ubuntu* provides a moral framework that guides human behaviour and interaction and therefore could be applied together with social constructivism as learning theory, together forming the theoretical framework of this study (section 2.4). The need for the development of critical thinking skills by the accountancy profession (section 2.5) is discussed next. The chapter concludes with a discussion of educational development of critical thinking as concept (sections 2.6.1–2.6.3), the practical implementation, such as the concept of scaffolding (section 2.6.4.1), the use of Web 2.0 technologies to promote interaction and teaching methods (section 2.6.4.2) that relates to social constructivism as learning theory.

2.2 DEVELOPMENT OF CRITICAL THINKING AS CONCEPT

The so-called twenty-first century skills are attributes that one would hope all university graduates are able to demonstrate by the time they enter employment (Rotherham & Willingham, 2009:16). Wagner (2014:14–38) lists seven skills that he considers important to survive the twenty-first century workplace: critical thinking and problem-solving skills, agility and adaptability, accessing and analysing information, communication skills, as well as curiosity and imagination, which were all identified as

part of critical thinking skills or good thinking habits in the American Philosophical Association's (APA) Delphi study (Facione, 1990:6, 13).

In interviews conducted with the president of the Chemical Management Division of BOC Edwards, Clay Parker, and the president and chief executive officer of Siemens Hearing Instruments, Christy Pedra, it became evident that thinking skills that go beyond subject knowledge is a requirement for future employees of these entities (Wagner, 2014:1–6). Both Parker and Pedra raised concerns that the current education system is more concerned with preparing students for specific examinations than with teaching them how to think effectively (Wagner, 2014:6). Critical thinking is one of the thinking concepts that could be developed in students.

The literature on critical thinking has its roots predominantly in Western literature and the academic disciplines of philosophy, psychology and education (Lai, 2011:4; Lewis & Smith, 1993:131; Sternberg, 1986:3–6). Each of these academic fields views critical thinking from a different perspective and therefore developed different definitions for the concept (Lai, 2011:4). The development of literature on critical thinking in philosophy spans over 2 500 years (Paul & Elder, 1997:1). Philosophers view critical thinking in terms of the perfect critical thinker (Lai, 2011:5). This entails that philosophers are concerned with the qualities and characteristics of the hypothetical critical thinker (Lai, 2011:5). The philosophical theories on critical thinking are therefore concerned with logic and opinion that could lead to the understanding of issues (Atabaki, Keshtiaray & Yarmohammadian, 2015:94).

Psychologists define critical thinking in terms of the cognitive and metacognitive skills (Hepner, 2015:77) needed with emphasis being placed on cognitive processes (Atabaki et al., 2015:94–95; Lewis & Smith, 1993:132). Psychologists are interested in assisting people to construct meaning out of their experiences and to focus on problem solving rather than on reflective thinking as described by philosophers (Lewis & Smith, 1993:132). Cognitive psychologists define the operations and procedures involved in critical thinking, and behavioural psychologists define the subtasks that would assist in developing behaviour that would lead towards the desired outcomes (Huitt, 1998). Viewing critical thinking in terms of processes or a list of tasks could however be problematic, since following the processes or completing the tasks does not necessarily indicate that critical thinking took place (Bailin, 2002:363). It is possible

to complete all the steps in a process or all the tasks on a list in a superficial manner and therefore the quality of the thinking process should also be kept in mind (Bailin, 2002:364).

The APA took note of the tremendous surge in critical thinking research and the requests from especially liberal educators regarding the need to develop critical thinking skills (Facione, 1990:1). A Delphi study was conducted with 46 participants known for their expertise regarding critical thinking (Facione, 1990:2). These participants were chosen from various academic fields, namely philosophy, physics, psychology, education, economics, critical thinking assessment, Freshman Studies, critical thinking, zoology, assessment and evaluation, social sciences, computer sciences and behavioural sciences (Facione, 1990:18–19). The panel of experts reached consensus and defined critical thinking and the perfect critical thinker as “purposeful, self-regulatory judgement which results in interpretation, analysis, evaluation and inference, as well as explanation of the evidential, conceptual, methodological, criteriological or contextual considerations upon which that judgement is based” (Facione 1990:2). Furthermore, the expert panel described the ideal critical thinker as –

[Someone who is] habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgements, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit (Facione, 1990:2).

In order to educate students to become good critical thinkers it is important to combine the development of critical thinking skills and dispositions or thinking habits (Facione, 1990:2).

For the purpose of this study, development of critical thinking skills was considered within an ODeL institution in the SA context. The next section discusses the aim and principles of ODeL as well as various visions and policies relating to skills development in South Africa.

2.3 CONTEXTUAL CONSIDERATIONS OF THE STUDY

Unisa is considered the largest ODeL institution in Africa (Unisa, 2020b). ODeL as delivery mode provided the context for this study. ODeL refers to an ODL model adopted by an institution whilst making use of e-learning for teaching and learning activities (see section 1.10). The aims for an ODL delivery mode are therefore discussed next. Higher education (HE) policies, SA law and Unisa's institutional policies also provide important boundaries and guidelines that had to be considered for the purpose of this study, and these are discussed next.

2.3.1 Open distance and learning (ODL)

Educational institutions worldwide have a variety of delivery modes to choose from, including face to face (on-campus), distance education, fully on-line or a blended approach (Gosper, Ifenthaler & Kretzscheider, 2018:72). Unisa decided to adopt ODL as the institutional delivery mode (Subotzky & Prinsloo, 2011:190), which applies principles from both distance education and open learning (Ghosh et al., 2012:53). Distance education is a form of education where the teacher (teaching activities) and student (learning activities) are separated (Moore & Kearsley, 2012:2) by time and space (Moore et al., 2011:129). In order to mediate the gap created by the separation in time and space, communication technologies are used (Moore & Kearsley, 2012:2). Open learning describes any form of education aiming to remove barriers between students and education (Rumble, 2005:5).

When combining the principles of distance education and the objectives of open learning, one could reach the conclusion that ODL aims to provide flexibility in time and space through the support of communication technologies (Kilinc & Altinpulluk, 2018:39). Open education is however far more complex than just providing flexibility in time and space. The philosophy of open education is that all people should openly participate in education through knowledge production and knowledge sharing and thus adding to existing knowledge (Opensource.com, 2020). Similar to open learning, the aim of open education is also to remove barriers (Opensource.com, 2020). Unisa's ODL definition explicitly mentions that time, geographical, economic, social, educational and communication barriers between the student and the institution, other students, module content and academics should be removed (Unisa, 2018c:2). Unisa

therefore aims to open educational offerings on more levels than suggested purely by distance education, by adding concepts from open education, for example removing time, geographical, economic, social, educational and communication barriers. The core dimensions of opening education (in other words, what should be open?) is access, content, pedagogy, recognition, collaboration and research (Inamorato dos Santos, Punie & Muños, 2016:25–27). The transversal dimensions explain how education is opened, and include strategy, technology, quality and leadership (Inamorato dos Santos et al., 2016:27–29).

Making education more accessible entails the removal or lowering of barriers hindering students from studying (Inamorato dos Santos et al., 2016:25). This includes removing time, geographical, economic, social, educational, communication (Unisa, 2018c:2), technological and institutional barriers (Inamorato dos Santos et al., 2016:25). Furthermore, students should be able to access education based on prior informal or independent learning (Inamorato dos Santos et al., 2016:25).

Opening content in open education refers to the availability of teaching and learning material (open educational resources or copyrighted) to everybody free of charge (Inamorato dos Santos et al., 2016:25). Rumble (1989:30) argues that openness in content also means that students should be given some degree of choice about the content they want to study, therefore creating alternative pathways to obtain qualifications. Students growing up in the digital age are used to choosing from the best available options and are therefore requesting “just-for-me learning” and “just-in-time learning” (Ossiannilsson, 2018:13). Open content creates the opportunity for these learners to make educated choices regarding their own learning.

Technology in open education entails the infrastructures and software used to create educational opportunities for everybody as well as opening up the various dimensions of education (Inamorato dos Santos et al., 2016:27). Technology is, for example, used to increase the possible pedagogical approaches in order to improve transparency, shareability and visibility of teaching and learning practices (Inamorato dos Santos et al., 2016:26). ODL is characterised by the wide range of technologies that are utilised, including print (correspondence model), mobile, communication and computer technologies (Ndlangamandla, 2015:5, 9). Emerging technologies, such as artificial intelligence, robotics, the internet of things, 3D printing, nanotechnology,

biotechnology, materials science, energy storage and quantum computing, will also influence educational offerings in the future, especially in ODL (Ossiannilsson, 2018:9).

Collaboration in open education is a dynamic concept involving change and adaption according to context, goals, resources and possibilities, whilst contributing to the removal of barriers to education (Inamorato dos Santos et al., 2016:26). The aim of collaboration in open education is to improve education and build bridges between informal, non-formal and formal learning (Inamorato dos Santos et al., 2016:26). Collaboration in ODL should take place between academia and industry, different institutions (ODL and conventional), academia, students, regulatory agents and leaders in ODL (Miglani, Awadhiya, Singh, Gowthaman & Kansal, 2018:64, 66, 69, 71). Employers are of the opinion that collaboration between students is key to the development of skills in students (Miglani et al., 2018:69). Creating online communities and encouraging students to share ideas and information within the community could provide the necessary platform for collaboration (Abdullah, 2017:58). Using asynchronous activities⁵ has the benefit of increasing participation (Poll, Widen & Weller, 2014:63) and, in the process, could assist in removing time barriers to education. It is within these communities and collaboration practices that African philosophy could provide guidance through the moral framework that guides human behaviour (see section 2.4.1). This moral framework together with application of the social constructivist learning theory is however also influenced by global visions for education as well as local educational policies.

2.3.2 From global visions to local policies

The role of education is to equip students with knowledge and skills for future employment, and therefore educational policies provide a vision of the future with specific focus on the development of human resources (Makoe, 2018:5). Global and local frameworks, policies and strategic plans were drawn up with visions for education to be accomplished by 2030 (National Planning Commission [NPC], 2012:4; United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2015:5). The

⁵ These are activities where students do not have to participate at the same time (Poll et al., 2014:62–64).

Incheon Declaration for Education was adopted in 2015, setting out the vision for global education in 2030 (UNESCO, 2015:5). This shared vision aims to ensure reaching Sustainable Development Goal 4 of the United Nations 2030, namely inclusive and equitable education of high quality, and to promote opportunities for lifelong learning amongst all groups of people (UNESCO, 2015:7; 2020:25). Similar to the definition of distance education (see section 1.10), lifelong learning can be defined as learning that takes place at any time (duration of life), in any place (even outside systems) and by anyone (UNESCO, 2020:21). Distance education programmes supported by technology and open educational resources form part of the strategies proposed to increase access, equity, quality and relevance of education (UNESCO, 2015:41).

Relevant education equips students with the skills they need to be “active, responsible and engaged” in society (OECD, 2018:4). In the OECD position paper for 2030, a learning framework for the future was created whilst considering the United Nations 2030 global Sustainable Development Goals (SDGs) (OECD, 2018:3). Disciplinary knowledge, epistemic knowledge and procedural knowledge were identified as important, together with cognitive and metacognitive skills, including critical thinking (OECD, 2018:5). Emphasis should be placed on the development of high-level cognitive and non-cognitive skills, especially transferable skills, such as critical thinking, problem solving, communication, teamwork and conflict resolution (UNESCO, 2015:43).

The 2030 National Development Plan for South Africa sets out the national vision for education in Chapter 9 of the 2030 National Development Plan for South Africa (NPC, 2012:4). In order to expand educational opportunities, the SA government envisages that distance education supported by information communication technology should play a defining role to accomplish the goal of inclusive and equitable education (NPC, 2012:295). The role of higher education is viewed as contributing to quality education, responding to the skills needed by society, providing lifelong learning opportunities, and conducting research (NPC, 2012:316). The NPC (2012:316) recognised that the HE system was not designed well enough to meet the skills development needs of the youth and the economy. Although skills development, especially digital transformation has made much needed progress, the Covid-19 pandemic highlighted the fact that

upskilling is still needed (Xaba, 2020). Within the ODL environment, collaboration in the development of quality learning material, improved access to appropriate technologies, and networking have been identified as important drivers for the future of education (Department of Higher Education [DHET], 2012:57–59; 2013:50–54). Educational offerings should take cognisance of the skills needed by employers to develop skills relevant to each particular sector (DHET, 2013:58).

As an ODeL institution, Unisa could play an important role towards fulfilling the 2030 national educational vision. In line with both the global and local educational vision for 2030 to open access to quality education for all people, Unisa aims to remove barriers to educational provision (Unisa, 2018c:2). Unisa acknowledges the importance of collaboration with stakeholders, and commits towards promoting lifelong teaching and learning partnerships and the provision of effective, quality teaching (Unisa, 2013:1). Unisa recognised the national need for skills development and responded by including the development of transferable skills in the curriculum development policy (Unisa, 2012:12). According to Unisa's teaching and learning charter, academics should strive towards developing curricula that would specifically assist with the development of critical thinking skills as well as enhance the employability of students (Unisa, 2013:2). Furthermore, the curriculum policy specifies that academic departments should interrogate and acknowledge the historical legacies in our African society and include various aspects of indigenous knowledge systems in the curriculum (Unisa, 2012:12,13). Promoting African thought and philosophy and allowing collaboration between diverse knowledge systems are therefore important (Unisa, 2012:13). African communalism and *ubuntu* provide important guidelines that could assist in the teaching and learning environments of Unisa, including that of financial accounting (see section 2.4.1).

2.4 THEORETICAL FRAMEWORK

The principles of the African philosophy of *ubuntu* together with the social constructivist learning theory formed the theoretical framework for this study.

2.4.1 African philosophy

The French philosopher credited for his contribution to Western notions of thinking and reason, René Descartes, coined the well-known phrase, “I think, therefore I am” (Dwyer, 2017:43; Kalantzis & Cope, 2012:223; 2019). On the other hand, the African philosopher, Mbiti said, “I am because we are and, since we are, therefore I am” (Goodreads, 2019). Descartes’s quote is strikingly different from that of Mbiti, which originated from his interpretation of the African philosophy of *ubuntu* (Ukhun, 2009:126). One could argue that Descartes describes the individualistic nature of Western thinking (Ikuenobe, 2018:215), whereas Mbiti captures the principle of communal thought in African philosophy. It is therefore important to understand communalism as depicted through *ubuntu* and especially the role of the community elders regarding the development – or the lack of development – of critical and creative thinking in Africa (Ukhun, 2009).

Ubuntu (see Figure 2.1) is an African philosophy that represents the core values of humanness, namely respect, dignity, generosity, obedience, humility, solidarity, caring, benevolence, hospitality, interdependence and communalism or altruism (Kamwangamalu, 1999:25–31; Letseka, 2016:5; Msila, 2008:70; Sambala et al., 2019:5). *Ubuntu* provides a “value system” that guides the behaviour of individuals who are fused together in communal structures (Idoniboye-Obu & Whetho, 2013:230).



Figure 2.1: Ubuntu value system

Source: Author's own compilation (Image: Pixabay.com)

Communalism is a concept, which refers to the fact that human beings are not viewed as individuals, but rather as a collective working towards an existence that is good for the collective (Khoza, 2005:266; Ukhun, 2009:125–129). These collectives cannot be reduced to the individuals that form part of the group, since the values and relationships that shape individual characters, thoughts and actions have been replaced by the shaping of a group (Ikuenobe, 2018:214). Individual rights and privileges should be sacrificed if not in line with the greater good of the community (Boykin, Jagers, Ellison & Albury, 1997:411), therefore focusing on duties and obligations rather than rights (Ikuenobe, 2016:443). These communities function through principles of sharing and contributing to the group (Boykin et al., 1997:411), cooperation, consensus, reconciliation and commonality (Horsthempke, 2018:60). Decision-making within communal structures rests on consensus and is reached

through group consultation (Osuji, 2014:3). Khoza (2011:438) describes this type of thinking within communal structures as a collective awareness. The community elders play a vital role in the development of the collective awareness and, as such, critical thinking within the community (Ukhun, 2009:132). When village elders follow an authoritarian leadership style and continuously override any individual insight without justification, it hampers critical thinking (Ukhun, 2009:133). On the other hand, when the village elders keep an open mind and invite collaboration and encourage rigorous inquiry and reflection, it fosters critical thinking (Ukhun, 2009:133).

In an American study conducted under diverse student populations, including students from African descent, Dyson and Brice (2016) used the principles of communalism to encourage the development of critical thinking skills in a course for social workers. A step-by-step approach was followed, and the educational environment allowed students to reflect critically on the information both individually and collectively (Dyson & Brice, 2016:108). The students were divided into small groups, emulating the community set-up as portrayed through communalism (Dyson & Brice, 2016:109). In their attempt to foster an African-centred approach based on African philosophy, Dyson and Brice (2016:110), made use of activities that required reflection, open discussions and cooperative problem solving based on research done by Wilson (2004:60–62). It was important that the students had to feel safe in this environment since being confronted with new knowledge could have exposed individual vulnerabilities to others (Dyson & Brice, 2016:109). The spirit of *ubuntu* could assist in creating a family atmosphere (Akinola & Uzodike, 2018:95) and therefore could provide a safe haven through demonstrating kindness and respect towards others. Respect could, for example, be shown by listening to others, no matter how inarticulately they express themselves or how irrelevant their contribution may seem (Enslin & Horsthemke, 2016:182). The principles of *ubuntu* guide humans to interact in such a way that people are comfortable to share without fear. It can therefore be argued that these principles are ideal to combine with social constructivism as learning theory where students learn through collaboration.

2.4.2 Social constructivism

Epistemology asks what knowledge is, and learning theories therefore stem from epistemology (Harasim, 2012:17). Learning theories set out to explain the different

positions of knowledge and how humans learn (Bates, 2015:66; Harasim, 2012:14). The three major theoretical frameworks in terms of learning theories are the behaviourist, the cognitivist and the constructivist learning theories (Harasim, 2012:21–22). Within the context of online learning, it is therefore important to take cognisance of the developments that take place and to consider appropriate learning theories from where principles could assist with the development of the e-learning environments.

Through online learning, it is possible to connect students and academics from all over the world and therefore bring together people with diverse backgrounds and experiences. The idea behind constructivism as learning theory is that individuals construct knowledge based on their own individual experiences (Anderson, 2010:38; Bates, 2015:54). Social constructivism adds the idea that knowledge could also be constructed based on the collective experiences and understandings of a group of people (Anderson, 2010:38), and therefore could be applied in an African context where communalism is of great importance (Venter, 2004:153). It could be argued that knowledge is constructed through reflection and social interaction where ideas can be shared and tested during collaborative projects and discussions whilst also benefiting from the unique combination of existing skills and experiences of each individual within the group (Bates, 2015:54). Schellens and Valcke (2006:366) found that working in small groups produced higher phases of knowledge construction (both quantitatively and qualitatively) than was the case in large groups. It is therefore important to consider the group sizes of students in the creation of social constructivist learning environments for optimal achievement of educational objectives, such as the development of critical thinking skills.

2.5 THE ACCOUNTANCY PROFESSION'S NEED FOR CRITICAL THINKING SKILLS

Over the past two decades, the accountancy profession, both locally and internationally, was rocked by numerous scandals involving professional accountants (Blackburn, 2019; Corporate Finance Institute, 2019; Plender, 2018). Some of the most notable scandals caused considerable financial losses to companies and shareholders, ruined the lives of many, and include the following (Blackburn, 2019; Corporate Finance Institute, 2019; PYMNTS, 2019):

- 1998 – Waste Management Inc.;
- 2001 – Enron Corporation;
- 2002 – WorldCom and Tyco International;
- 2003 – HealthSouth Corporation and Federal Home Loan Mortgage Corporation (also known as Freddie Mac);
- 2005 – American International Group;
- 2008 – Lehman Brothers and Bernie Madoff;
- 2009 – Satyam Computer Services;
- 2016 – British Home Stores (BHS) (ongoing);
- 2018 – Carillion, General Electric, and the Guptas; and
- 2019 – Steinhoff.

During 2018, Carillion collapsed due to the company's inability to service the accumulated debt that reached £1.5 billion (Blackburn, 2019). The auditing firm, Klynveld Peat Maverick and Goerdeler (KPMG), was criticised afterwards for allowing aggressive accounting policies and failing to recognise the depreciation of intangible assets, for example goodwill (Sikka, 2019). Similarly, PricewaterhouseCoopers (PwC) came under scrutiny after issuing a clean audit report for the BHS chain just before the home stores were placed under administration (Blackburn, 2019; Sikka, 2019). Inadequate tests were performed during the verification of the assets, investments, loans, income and costs as well as whether BHS could still be viewed as a going concern (Sikka, 2019). Locally, KPMG made the headlines for their involvement in the Gupta scandal, and was subsequently forced to withdraw their findings in a report that was used as evidence (Blackburn, 2019; Plender, 2018). As the list of accounting scandals grows, the calls for reform of the accounting profession and of accounting education are also becoming louder (Amernic & Craig, 2004; SAICA, 2018c).

Professional accountants require both professional scepticism and judgement to conduct assurance engagements in a proper and thorough manner (Fazal, 2011). Professional scepticism, having an inquisitive mind and evaluating audit evidence, is needed to prevent fraud (Grenier, 2017:241). Professional judgement requires

relevant training, knowledge, skills and experience, and is required when applying the SAICA conceptual framework to make informed decisions about available courses of action (SAICA, 2018a:40). Both professional scepticism and professional judgement require accountants to have a critical mind-set (International Ethics Standards Board for Accountants [IESBA], 2018a:6). Analytical and intellectual skills are therefore important, since accountants require the ability to analyse information, reason logically, clarify relationships between different variables, and come to justifiable conclusions (Barac, 2009:68).

The work environment of the professional accountant has become increasingly complex due to the technical developments, technological developments and the ease of information sharing that enables the development of global business groups and cross-border transactions (Barac, 2009:63; Douglas & Gammie, 2019:310; Lawson et al., 2014:299). Globally, the accountancy profession started to recognise the fact that soft skills, especially critical thinking should be developed through the various accounting education offerings in order to produce independent lifelong graduates who are adaptable within a rapidly changing society (Barac, 2009:62; Bunney, Sharplin & Howitt, 2015:256; Cunningham, 2014:401; St. Pierre & Rebele, 2014:105; Young & Warren, 2011:859). It is therefore not surprising that during the Future CA2025 debate, hosted by SAICA in Johannesburg on 2 December 2016, it was emphasised by various international representatives that graduates need to develop a range of multi-disciplinary skills that could be applied in various contexts and circumstances (Chartered Accountants Worldwide, 2017:5). It is also essential that future accounting professionals become lifelong learners, have an acute awareness of stakeholder needs, and are able to communicate and share knowledge whilst being connected to the real world (Chartered Accountants Worldwide, 2017:5). A greater focus on the skills needed by accountants to be successful in the work environment is therefore essential. Barac (2009:66–69) identifies the need for improved computer capabilities, communication skills, analytical and intellectual skills as well as interpersonal skills. Critical thinking skills is one aspect of analytical and intellectual skills, the exercise of which enables a person to integrate information from an array of disciplines for decision-making purposes (Barac, 2009:69; Williams, 2018:61).

An ongoing debate on the topic of critical thinking exists between the so-called “generalists” who view critical thinking as universal versus the so-called “specificists” who view it as a way of thinking with both general and discipline-specific traits (Davies, 2013:530). Powers and Enright (1987:658–682) reported on their findings after conducting a study on the various reasoning skills required in different academic fields. They concluded that similarities and differences could be found in the reasoning skills required from different disciplines. Differences comprised the type of skills required and the emphasis (very important to less important) on skills that overlapped (Powers & Enright, 1987:658–682). More recently, in a similar study, Moore (2011:272–273) reached a similar conclusion and stated that, if critical thinking skills were fostered within specific disciplines, we would enable students to develop into flexible and versatile thinkers, equipped for the twenty-first century job market. It is therefore necessary to define the concept of critical thinking with specific reference to the field of accountancy.

Baril, Cunningham, Fordham, Gardner and Wolcott (1998:389–390) conducted interviews with accounting professionals in order to understand what constitutes critical thinking within the profession, resulting in the identification of cognitive and non-cognitive attributes. The competency framework of SAICA defines critical thinking as “the process of actively conceptualising, applying, analysing, synthesising, and/or evaluating information. It is evidenced by clarity, accuracy, precision, consistency, relevance, sound evidence, good reasoning, depth and breadth” (SAICA, 2017:42). The American Institute of Certified Public Accountants (AICPA) also recognised the importance of strategic and critical thinking for professional accountants by defining and including certain skills in the first competency framework created in 1999 (Foster & Bolt-Lee, 2002). Table 2.1 provides a comparison between the cognitive skills identified by Baril et al. (1998), Kimmel (1995), AICPA (see Foster & Bolt-Lee, 2002) and SAICA (2017).

Table 2.1: Cognitive domain: Critical thinking skills identified by accounting professionals and professional bodies

Cognitive attributes and characteristics (Baril et al. 1998:392)	The American Institute of Certified Public Accountants (AICPA) (see Foster & Bolt-Lee, 2002)	The competency framework of SAICA (SAICA, 2017:42–43)	Huffman, Vernoy, Williams & Vernoy's (1991) critical thinking framework applied in accounting study (Kimmel, 1995:301)
Recognises problem areas within the knowledge domain	Identifying strengths and weaknesses, as well as opportunities and threats for specific scenarios or activities		Defining problems accurately
Recognises when information is incomplete	The ability to identify and gather information from a variety of sources and reporting the findings in an insightful manner that would assist in decision-making	The identification of information to be verified and to determine the extent of verification needed in order to reach valid conclusions Identification of the purpose of computations and the information that is required for the computations	
Can form a holistic view from all the bits of information		Integrating ideas and information from a variety of sources and exploring various possible solutions, considering alternative interpretations of information	Synthesising
Can transfer knowledge from one context to the next	The ability to apply knowledge gained to new and/or unknown scenarios	Evaluating information and ideas and being able to determine a suitable response to unexpected findings	Resisting overgeneralisation
Anticipates, plans and thinks ahead	The articulation of the principles in strategic	Communicating and justifying conclusions and opinions	

Cognitive attributes and characteristics (Baril et al. 1998:392)	The American Institute of Certified Public Accountants (AICPA) (see Foster & Bolt-Lee, 2002)	The competency framework of SAICA (SAICA, 2017:42–43)	Huffman, Vernoy, Williams & Vernoy's (1991) critical thinking framework applied in accounting study (Kimmel, 1995:301)
	planning processes	Drawing conclusions and providing suitable recommendations	
	The ability to analyse and prepare strategic information	Analysing ideas Analysing cause-and-effect relationships	Analysing data for value and content
			Employing a variety of thinking processes in problem solving (inductive, deductive, dialogical, dialectical)
			Employing metacognition (reflective or recursive thinking)

Source: Author's own compilation

As is evident from Table 2.1, all authors concluded that financial accountants should have the ability to apply knowledge obtained in one context in other contexts; therefore, applying knowledge in unknown situations without overgeneralising. The ability to identify incomplete information and utilising information in the process of strategic planning were identified by Baril et al. (1998), AICPA (see Foster & Bolt-Lee, 2002) and SAICA (2017) as important critical thinking skills. Recognising and defining problems as well as the ability to synthesise were identified by Baril et al. (1998), SAICA (2017) and Kimmel (1995). The ability to analyse data for strategic planning (Foster & Bolt-Lee, 2002), ideas for cause and effect relationships (SAICA, 2017), and data for value and content (Kimmel, 1995) are also important. In addition, Kimmel (1995) recognised the importance of the ability to apply a variety of thinking processes in problem solving, as well as the benefits of reflective and recursive thinking. However, as illustrated in Table 2.1, none of these studies included all the skills

identified as applicable to financial accountants and the studies can therefore not be seen as comprehensive.

Since the skills identified by SAICA (2017:42–43) describe the level of critical thinking skills accountants should exhibit by the time they enter the profession and do not present a prescriptive roadmap for the development of these skills, it is important to take note of these requirements, although a more comprehensive approach could be followed. Terblanche (2019:18) used the definition and dimensions of critical thinking as per the APA Delphi study (Facione, 1990; also see section 2.2 and Table 2.3) as basis for the development of a conceptual framework for the development of critical thinking skills in auditing students, finding it to be the most comprehensive of all the definitions.

Baril et al. (1998) and Kimmel (1995) identified various critical thinking attributes from the affective domain that should also be developed in accounting students. Showing the attributes of initiative, curiosity, confidence and good communication skills (being concise and articulate) is deemed important for accountants by Baril et al. (1998:392), whereas Kimmel (1995:301)⁶ recognises valuing truth, accepting change, empathy, welcoming divergent views and recognising personal biases as important. On the other hand, critical thinking attributes are not explicitly mentioned in the SAICA competency framework and, although certain deductions can be made, the information in the framework is vague at best (Terblanche, 2019:49). As is the case with critical thinking skills, the APA Delphi study provides the most comprehensive view of what critical thinking attributes entails and should therefore be considered (see section 2.6.3 and Table 2.2).

Although there is not one universal definition for critical thinking – neither in general nor with specific reference to the field of accountancy – it is regarded as important and also expected from graduates to exhibit certain traits. The lack of consensus on the definition of critical thinking between various disciplines poses challenges in education, since one can only teach what you know (Hepner, 2015:68; Paul & Elder, 2005:7). It is therefore the responsibility of academics to determine a definition of

⁶ Kimmel (1995) applied the critical thinking framework created by Huffman et al. (1991) in an accounting study.

critical thinking that informs their teaching strategies (Van Erp, 2008:29–30). Consideration should therefore also be given to the various critical thinking skills and habits as well as research already conducted regarding the teaching and learning of such skills and habits.

2.6 EDUCATIONAL DEVELOPMENTS OF CRITICAL THINKING

In order to acquire the best possible teaching and learning strategies for critical thinking development, educators make use of ideas from both philosophy and psychology (Terblanche, 2019:33).

2.6.1 Background

The first attempts to understand critical thinking in terms of how it could best be developed through education systems came in the early 1900s from Dewey (Ennis, 2018:165). Dewey (1910:27–28) stated that education could not teach all information or provide proof for every statement made and should therefore cultivate habits that would test beliefs, develop an open-minded preference for conclusions based on evidence, and ensure the application of methods of inquiry and reasoning in order to solve problems.

Benjamin Bloom and Robert Gagne were two of the main contributors towards critical thinking theory for education (Sternberg, 1986:6). Bloom created a hierarchical taxonomy (Maree & Fraser, 2008:69) of cognitive skills (Sternberg, 1986:6), which comprises knowledge, comprehension, application, analysis, synthesis and evaluation (Bloom, Engelhart, Furst, Hill & Krathwohl, 1956:46–49). Gagne introduced the concept of learning hierarchies (Sternberg, 1986:6) and theorised that any set of intellectual skills have a specified order for optimal learning (Gagne, 1968:1). The stage theory of critical thinking development (Elder & Paul, 2010:1) states that critical thinking skills are specifically developed in six stages from unreflective thinker to accomplished thinker.

2.6.2 Bloom's revised taxonomy

Taxonomies are frameworks that describe the types and levels of learning outcomes (Maree & Fraser, 2008:69). Bloom's original taxonomy has been widely used in

education (Wilson, 2001:4) to create educational objectives (Maree & Fraser, 2008:69), which challenge students on levels of lower-order thinking through to the levels of higher-order thinking (Churches, 2008:1). The original taxonomy consists of six hierarchical and cumulative levels, with each preceding level forming the foundation for the next (Krathwohl, 2002:212–213). The six levels are described with the nouns indicating the types of knowledge students are to require, namely knowledge, comprehension, application, analysis, synthesis and evaluation (Anderson & Krathwohl, 2001:5; Churches, 2008:2) (see Table 2.2 for a comparison Bloom’s taxonomy, Bloom’s revised taxonomy and the critical thinking skills of the APA Delphi study).

From 1995 to 2000 (Wilson, 2001:2), a group of eight experts comprising cognitive psychologists, curriculum theorists, instructional researchers and testing and assessment specialists worked together to revise the original Bloom’s taxonomy (Anderson & Krathwohl, 2001:xxviii). The revised taxonomy is two-dimensional, acknowledging the existence of the knowledge and cognitive dimensions towards learning (Wilson, 2001:2). Although Bloom’s revised taxonomy still consisting of different levels it is evident from Figure 2.2 that the hierarchy of the revised taxonomy was relaxed to allow for an overlap between the different categories of cognitive processes (Krathwohl, 2002:215).

Similar to the original taxonomy, the revised cognitive processes comprises six levels, as per Figure 2.2, but are now expressed through verbs (Krathwohl, 2002:213, 215):

remember – the ability to recall relevant information from memory

understand – the ability to determine the meaning from various forms of instructional material

apply – the ability to perform specific procedures in any given scenario

analyse – the ability to break information down into subsections and the ability to understand the relationships between these subsections within the total structure

evaluate – the ability to make judgements based on criteria and standards

create – the ability to produce an original product from various elements.

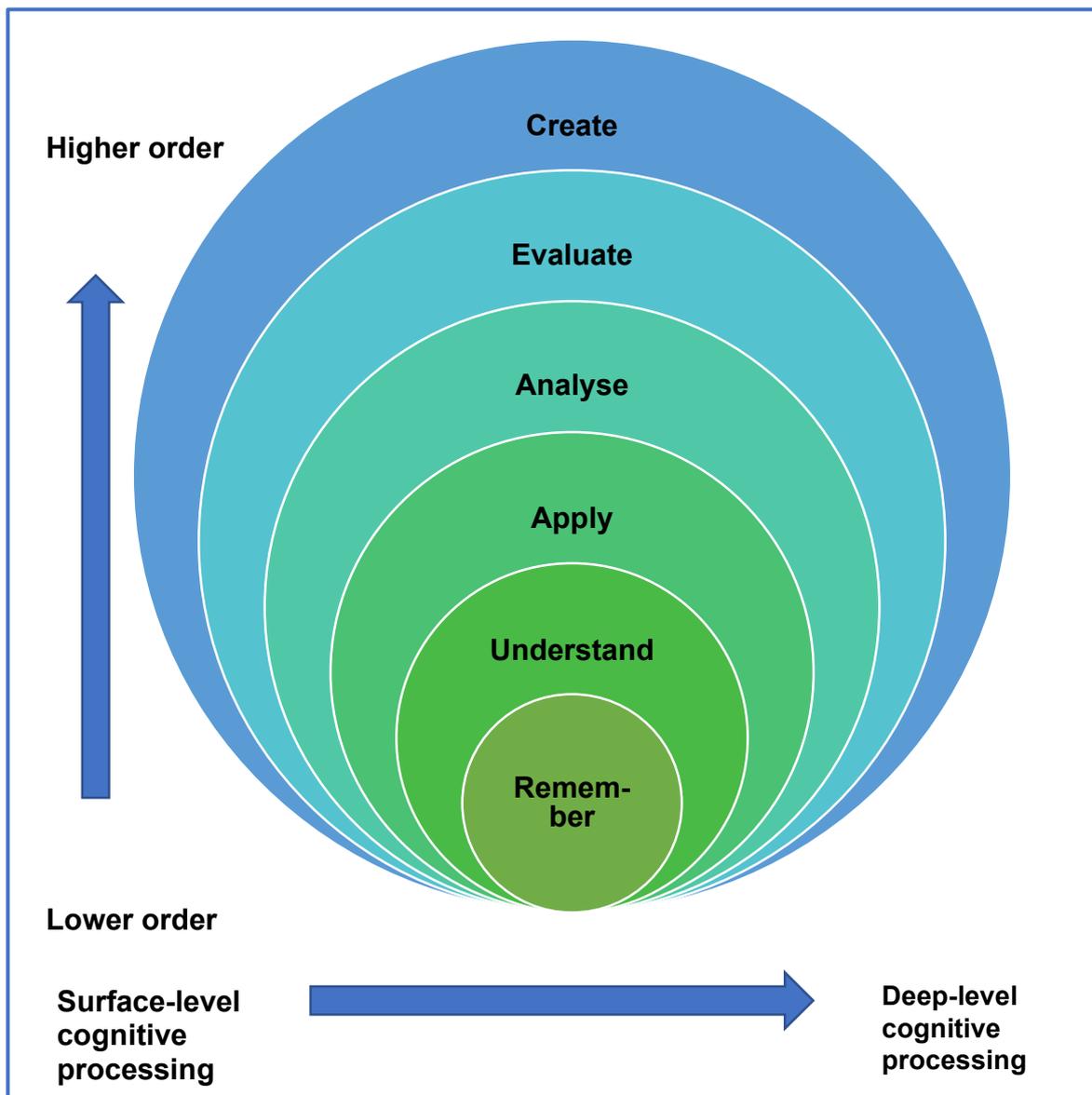


Figure 2.2: Bloom's revised taxonomy – overlapping skills of the cognitive dimension

Source: Author's own compilation

The team of experts considered the development within the field of cognitive psychology from 1956 to 2000 to determine the categories for the knowledge dimension (Anderson & Krathwohl, 2001:27). The knowledge dimension was divided into four categories, namely factual knowledge, conceptual knowledge, procedural knowledge and metacognitive knowledge (Anderson & Krathwohl, 2001:29).

Factual knowledge is the foundational or basic knowledge a student requires of any given subject in order to be acquainted with the discipline and to be able to solve basic

problems (Krathwohl, 2002:214). Factual knowledge includes knowing terminology, specific details and elements (Anderson & Krathwohl, 2001:27).

Conceptual knowledge is a deeper or more complex type of knowledge than factual knowledge that requires students to know classifications, categories, principles, generalisations, theories, models and structures (Anderson & Krathwohl, 2001:27). This kind of knowledge requires of students to start conceptualising various relationships among basic elements within the larger body of knowledge (Krathwohl, 2002:214).

Procedural knowledge requires students to know how to complete tasks, use skills, algorithms, techniques and methods (Anderson & Krathwohl, 2001:27). Students should also be able to use criteria to identify which procedure or technique would be the most appropriate to use given the subject matter and context (Anderson & Krathwohl, 2001:27; Krathwohl, 2002:214).

Metacognitive knowledge is knowledge about cognition in general as well as an awareness of one's own thought processes (Anderson & Krathwohl, 2001:27). This category of knowledge has become very important, since it requires of students to reflect upon their own thinking to adapt and improve their thinking processes (Krathwohl, 2002:214). Metacognitive knowledge is very important for critical thinkers, since characteristics of critical thinkers include the ability to reflect honestly upon one's own biases, prejudices, stereotypes, egocentric or sociocentric tendencies and to determine appropriate action to be taken, including the willingness to adapt one's own view after honest reflection had indicated that change is necessary (Facione, 1990:13).

2.6.3 Critical thinking – cognitive skills and attributes or dispositions

The expert panel that participated in the APA Delphi study identified six core cognitive skills, which are considered important for critical thinking (Facione, 1990:6). Each of these core cognitive skills in return was broken down to produce a combined total of sixteen subskills (Facione, 1990:6). The various cognitive critical thinking skills are not hierarchical since the competencies for each skill overlap (Paul & Elder, 2005:17). In practice, certain skills could also presuppose the use of others with more than one critical thinking skill used within one cognitive process (Facione, 1990:6). This

indicates that the critical thinking skills are interrelated and therefore function together in relation to one another, indicating that the skills should be taught together and not in isolation (Paul & Elder, 2005:17). The non-hierarchical nature of critical thinking skills (Paul & Elder, 2005:17) therefore makes these skills more comparable with the relaxed hierarchical structure of Bloom's revised taxonomy that concedes that overlapping exists between the various cognitive processes (see Table 2.2) (Krathwohl, 2002:215).

Table 2.2 compares the educational taxonomies of Bloom et al. (1956), Bloom's revised taxonomy (Anderson & Krathwohl, 2001) and the critical thinking skills identified by the APA Delphi study (Facione, 1990). Anderson and Krathwohl identified subskills related to each of the six levels in Bloom's revised taxonomy. These subskills were used to match the critical thinking skills identified in the APA Delphi study with the six levels of Bloom's revised taxonomy where needed. No matching skills were identified for the levels of remember, apply or create. Based on the subskills, "understand relates to interpretation", inference and explanation. Analysis and evaluation were identified in both studies. Although not included in the six levels of the taxonomy, Anderson and Krathwohl also identified metacognitive knowledge, which relates to self-regulation as identified in the APA Delphi study. Table 2.2 indicates each category and the subskills for each category as identified in these three studies (i.e. Bloom et al. 1956, Anderson & Krathwohl, 2001 and Facione, 1990). Bloom's taxonomy indicates a hierarchy from lower-order thinking skills to higher-order thinking skills (Krathwohl, 2002:212–213), whereas Bloom's revised taxonomy and the APA Delphi study recognises relationships and overlaps between the various skills and the need for horizontal development of each skill (Facione, 1990:4-5; Krathwohl, 2002:215).

Table 2.2: Comparison of educational taxonomies and the critical thinking skills of the APA Delphi study

Educational taxonomies				ADA Delphi study		
	Bloom et al (1956)	Bloom's revised taxonomy Anderson and Krathwohl (2001)		Facione (1990:2-13)		
<p>Lower-order thinking skills</p>  <p>Higher-order thinking skills</p>	Knowledge	<p>Factual knowledge Conceptual knowledge Procedural knowledge Metacognitive knowledge</p>	Remember	Recognising Recalling		
			Growing horizontally to reach deeper levels for each skill			
	Comprehension		Understand	<p>Interpreting Exemplifying Classifying Summarising Inferring Comparing Explaining</p>	Interpretation	Categorise Construe significance Clarifying meaning
					Inference	Querying evidence Hypothesising alternatives Drawing conclusions
					Explanation	Stating results Justifying procedures Presenting arguments
	Application		Apply	Executing Implementing		
	Analysis		Analyse	Differentiating Organising Attributing	Analysis	Examining ideas Identifying arguments Analysing arguments
	Synthesis					
Evaluation	Evaluate	Checking Critiquing	Evaluation	Determining credibility of claims Determining validity of arguments		
		Create	Generating Planning Producing			
				Self-regulation	Self-examination Self-correction	

Source: Author's own compilation

Critical thinking is however more than just the application of various skills or learnt behaviour (Halpern, 1998:452). One cannot isolate cognitive skills without considering the affective domain, since nearly every cognitive skill stands in relation to a corresponding attribute in the affective domain (Anderson & Krathwohl, 2001:258). It is therefore also important to take note of the affective domain when it comes to critical thinking. Dispositions are a combination of attitudes, intentions, values and beliefs that form an integral part of a person's character (Facione, 2000:63). When identified,

dispositions could allow for the prediction of actions and reactions under various circumstances (Facione, 2000:63). Facione and Halpern share the view that one could develop many cognitive skills, but without the motivation or habits to utilise those skills one will never be a critical thinker (Facione, 2015:10; Halpern, 1998:452). Consensus was reached by the experts conducting the APA Delphi-study on the importance of dispositions and, as a result, nineteen dispositions (see Table 2.3) were identified, which describe the character of a critical thinker (Facione, 1990:13).

During the initial development of Bloom's taxonomy, attention was only given to the cognitive domain (Anderson & Krathwohl, 2001:xxvii). It was only in 1964, that Krathwohl, Bloom and Masia developed a framework for the affective domain (Anderson & Krathwohl, 2001:xxvii). Bloom's revised taxonomy of Anderson and Krathwohl (2001:259) takes cognisance of the affective domain through the inclusion of the metacognitive knowledge level, but does not identify specific attributes. Table 2.3 compares the affective domain taxonomy of Krathwohl et al. (1964) with the attributes of a critical thinker identified through the APA Delphi study. Buissink-Smith, Mann and Shephard (2011) provided characteristics of each of the attributes identified by Krathwohl et al. (1964). These characteristics were used to link the various attitudes and dispositions identified in the APA Delphi study (Facione, 1990) to the attributes identified by Krathwohl et al. (1964).

Table 2.3: Comparison between the affective domain expressed in taxonomies and critical thinking attitudes or dispositions

Krathwohl et al. (1964)	Buissink-Smith et al. (2011) (adapted) Characteristics of attributes identified by Krathwohl et al. (1964)	Facione (1990:2–13) (adapted) Attitudes or dispositions expected from a critical thinker
Receiving	Students are willing to engage with new concepts and experiences and are willing to listen. They have the ability to ask questions, to listen, to participate, to discuss and acknowledge what they have received.	<ul style="list-style-type: none"> - Inquisitiveness – showing an interest in learning more about a wide array of concepts and/or issues - Lifelong learning – demonstrating interest in becoming and remaining generally well informed
Responding	Students are active participants in the classroom. They can interpret information, clarify and question ideas.	<ul style="list-style-type: none"> - Able to recognise opportunities to make use of critical thinking skills - Placing trust in the processes of reasoned inquiry - Showing confidence in one’s own reasoning skills - Able to state the question or concern regarding information and/or opinions succinctly
Valuing	Students attach value to their own opinion and can express their own opinions. They can debate, evaluate critically, refute and justify arguments.	<ul style="list-style-type: none"> - Being open-minded when confronted with antithetical worldviews - Demonstrating flexibility through consideration given to alternative solutions and opinions - Showing an understanding of the opinions of other people when, for example, evaluating arguments - Searching assiduously for relevant information
Organisation	Students develop a value system. Students can formulate arguments, defend their opinion, recognise relationships between sets of information, prioritise, contrast and compare.	<ul style="list-style-type: none"> - Being fair-mindedness when judging reasoning - Reflecting honestly upon one’s own biases, prejudices, stereotypes, egocentric or sociocentric tendencies and can determine appropriate action to be taken - Showing caution and /or care when delaying, making or changing judgements

Krathwohl et al. (1964)	Buissink-Smith et al. (2011) (adapted) Characteristics of attributes identified by Krathwohl et al. (1964)	Facione (1990:2–13) (adapted) Attitudes or dispositions expected from a critical thinker
		<ul style="list-style-type: none"> - Methodical when dealing with complex tasks - Demonstrating good discernment during the selection and application of criteria - Being conscientious when focusing on any task or problem - Able to persevere when complexities or difficulties are encountered
Characterisation	Students adopt a value system and consistently act accordingly. They can act or behave in a certain manner and can influence others.	<ul style="list-style-type: none"> - Willingly adapting one's own view after honest reflection had indicated that change is necessary - Demonstrating meticulous accuracy to the degree that would be expected based on the subject and the circumstances

Source: Author's own compilation

From Table 2.3, it is evident that, although corresponding to the attributes identified by Krathwohl et al. (1964), the APA Delphi study provides a more detailed list of attributes from where the applicable habits that one could develop in first-year financial accounting students can be identified.

2.6.4 Considerations for practical implementation

Scaffolding, the stages of critical thinking and teaching strategies utilising technology for the development of critical thinking skills are important aspects to consider when implementing strategies for the development of critical thinking. A discussion of scaffolding and the stages of critical thinking follows in section 2.6.4.1, the principles of social constructivism are considered in section 2.6.4.2, and a discussion on teaching strategies utilising technology follows in section 2.6.4.3.

2.6.4.1 Scaffolding in the curriculum to develop critical thinking skills

The concept of scaffolding in education was first explained by Wood, Bruner and Ross (1976:90). The example given is that of a child who is given a task that is beyond his or her capabilities. Guidance is then provided until the child completes the task. Scaffolding could effectively be implemented whilst following a student-centred approach (Hsiao, Mikolaj & Shih, 2017:1–2). This approach would require that the individual capabilities of students be known, and each student receives the support through various learning activities that would guide him or her from the current level to the level of the desired outcome (Pea, 2004:443).

The development of critical thinking skills could be explained through six distinct stages, namely the unreflective thinker, the challenged thinker, the beginning thinker, the practicing thinker, the advanced thinker and the accomplished thinker (Elder & Paul, 2010). The stages theory assumes that every person who wishes to develop his or her critical thinking skills would move through each of the stages through cautious effort and be guided through effective instruction as needed (Elder & Paul, 2010). It can therefore be argued that the various stages could be used as framework for the scaffolding of instruction with the aim to assist students to develop their critical thinking skills.

Critical thinking skills develop slowly, over a long period of time, making it very difficult to measure the success of any interventions aimed at developing skills (Cunningham, 2014:411; Dwyer et al., 2014:48; Saavedra & Opfer, 2012:10; Wolcott, Baril, Cunningham, Fordham & St. Pierre, 2002:86; Young & Warren, 2011:861). From an educational perspective, this means that the teaching of critical thinking skills would be more effective if done throughout a degree programme rather than just in one individual course focusing on critical thinking skills (Doney et al., 1993:298).

An infusion or embedded approach (explicit inclusion), immersion approach (implicit inclusion) or a mixed approach (stand-alone courses as well as integration into subject matter) could be followed, meaning that critical thinking skills are taught together with subject matter (Terblanche, 2019:80–81). Integrating pervasive skills, for example critical thinking, could be very challenging in the field of accountancy because accounting courses traditionally focused on the transmission of high-quality technical knowledge leaving little room in the full curriculum for focus on other skills (Smit & Steenkamp, 2015:670). At Unisa, the matter has been complicated further because traditional distance education based on the correspondence model (Bates, 2015:193–194), was more conducive to the transmission of knowledge than to the integration of certain skills in the curriculum (Heydenrych & Prinsloo, 2010:14). Correspondence education was known for the effective one-to-many communication, whilst making use of the principles of behaviourist-cognitivist learning theories in the teaching activities (Anderson & Dron, 2011:83). Institutional changes as well as discipline-specific changes were therefore required.

Furthermore, due to the numerous skills included in critical thinking it is important to identify which skills would be most appropriate in the curriculum for first-year financial accounting (Kealey, Holland & Watson, 2005:35). Accounting instructors should therefore foster environments that encourage curiosity and questioning, are evidence-based, require evaluation, stimulate dialogue and design activities that allows for higher-order problem solving (Doney et al., 1993:300). Young and Warren (2011:866) identified the transfer of foundational knowledge obtained from textbooks to new and unfamiliar scenarios as an appropriate critical thinking skill to develop in first-year financial accounting students. On the other hand, Kealey et al. (2005:35, 45) concluded that interpretation, analysis, evaluation, inference, presenting arguments,

reflection and dispositions (thinking habits) are important critical thinking skills for success in introductory accounting modules dealing with principles of accounting. These skills and thinking habits could be developed in the online learning environment through teaching methods utilising various Web 2.0 technologies.

2.6.4.2 Teaching methods and technologies used to develop critical thinking skills

With the development of the internet and, more specifically Web 2.0 technologies, it became possible to create and share knowledge through collaboration (Lee & McLoughlin, 2010:62, 74). The key ideas behind the creation of Web 2.0 technologies were enabling users to generate content; harnessing the power of crowds; and increasing data, group participation, networking and openness (Anderson, 2007:14). Since Web 2.0 technologies enable users to create and share knowledge, they also allow the creation of collaborative learning environments (Frisch, Jackson & Murray, 2013:70; Liburd & Christensen, 2013:100). Tools, for example discussion forums, blogs and wikis, could therefore be used in line with social constructivist principles stimulating interaction, critical thinking and collaboration (Liburd & Christensen, 2013:100–101). The Accounting Education Change Commission and AICPA are encouraging the implementation of active learning strategies in combination with the creative utilisation of technologies in the accounting curriculum (Terblanche, 2019:83).

It can be argued that the African philosophy of *ubuntu* is ideal to form the foundation for collaborative learning with Web 2.0 tools in South Africa. The reason for this is that *ubuntu* rejects competitiveness and requires co-operation, and therefore provides a platform from where social networks can be utilised for learning whilst being guided by practices of compassion, kindness, unselfishness and respect (Halse & Mallison, 2011:627; Letseka, 2016:35; Msila, 2008:70). In a social study course, the academics involved explored the use of wisdom imparted by African proverbs for enhancing critical thinking skills (Asimeng-Boahene, 2009:59). In the study, the Xhosa proverb *umuntu ngumuntu ngabantu* (a person is a person through persons) was, for example, used to explain the critical thinking disposition of objectivity (Asimeng-Boahene, 2009:65). This Xhosa proverb also depicts the essence of *ubuntu* in African communities (Letseka, 2016:5).

Critical thinking skills are developed through instruction that promotes active learning, is problem-based, utilises real-life problems and stimulates interaction (Ten Dam & Volman, 2004:370). Problem-based learning, concept mapping, simulations and case studies were identified as widely implemented active learning strategies aimed at developing critical thinking skills (Carter, Creedy & Sidebotham, 2016:218; Lee et al., 2013:1219).

Problem-based learning is a student-centred instructional approach where ill-structured, real-life problems are used in order to empower students to conduct research, integrate theory and practice whilst applying knowledge and skills in the development of viable solutions (Savery, 2006:12). The goal of problem-based learning is to assist students to construct knowledge and to develop problem-solving skills, while becoming self-directed learners who are effective collaborators intrinsically motivated to learn (Hmelo-Silver, 2004:240). Dreifuerst (2015:268–269) made use of debriefing for meaningful learning, an approach grounded in constructivist and problem-based learning theories, applying the principles of Socratic questioning.

Socratic questioning is a popular technique used to stimulate dialogue between an instructor and one or more students (Elder & Paul, 2007:84). It is further a systematic, disciplined and deep questioning method with a focus on foundational concepts, principles, theories, issues or problems, and could be used in collaborative environments to stimulate Socratic dialogue (Elder & Paul, 2007:84). Socratic questioning is viewed as one of the most powerful teaching methods to allow students to engage in higher-order thinking and resultantly to develop critical thinking skills (Barnes & Payette, 2017:6; Maiorana, 1991).

Socratic dialogue is a method used for group discussions where the participants are guided by a facilitator and a predetermined set of guidelines, whilst striving towards consensus in answer to questions based on real-life problems with the purpose to gain new insight (Knežić, Wubbels, Elbers & Hajer, 2010:1105). This kind of dialogue can only be initiated when all the parties involved are humble, recognise that they do not know everything and, as a result, engage in a “communal” process of questioning in search of answers (Dinkins & Cangelosi, 2019:5). Humility and communalism form an integral part of *ubuntu* and African philosophy (Khoza, 2011:438; Letseka, 2016:5;

Osuji, 2014:3) and could therefore be utilised as foundation for the implementation of Socratic dialogue. Yang (2008:245) conducted a study on the implementation of Socratic methods for the development of critical thinking skills. Academics were trained to use six categories of Socratic questions to stimulate the dialogue, namely clarification, probe assumptions, probe reasons and evidence, viewpoints and perceptions, implications and consequences, and the question under investigation (Yang, 2008:245). Van Seggelen-Damen, Van Hezewijk, Helsdingen and Wopereis (2017:810) argue that the principles of Socratic dialogue could also be applied during reflective activities, since reflection could be viewed as a dialogue with oneself. The principles of Socratic dialogue can be used in education to improve critical thinking skills (Knežić et al., 2010:1110) through activities such as synchronous and asynchronous discussion forums (Brooke, 2006:143; Yang, 2008:241–264), debates, trials, public hearings (Brooke, 2006:143), debriefing (Dinkins & Cangelosi, 2019:6), reflection (Van Seggelen-Damen et al., 2017:810) and the Socratic case method (Brooke, 2006; Knežić et al., 2010:1106).

2.7 CONCEPTUAL FRAMEWORK

The conceptual framework as presented in Figure 2.3 demonstrates how the researcher visualised the core concepts of the research project during the initial phases. This version of the conceptual framework was provided to the IC (see section 3.4.3.1). The second yellow oval shows that Unisa functions as an ODeL institution. Removing barriers between students and the institution, a student and other students, lecturers and students, and students and content should therefore be considered when developing curriculums (see section 2.3.1). The second yellow oval shows that education has received global attention through the adoption of the Incheon Declaration for Education (see UNESCO, 2015:5). The shared global vision has been filtered through to SA national policies as well as the Unisa policies. These visions and policies provided a legal framework for the present study (see section 2.3.2). The next two yellow ovals illustrate the theoretical framework for this study, which combined the principles of *ubuntu* (see section 2.4.1) and social constructivism (see section 2.4.2). For the purpose of this study, *ubuntu* provided a moral framework guiding human behaviour in the learning environment. The principles of social constructivism as learning theory provided guidelines for how critical thinking skills could be developed.

The concept of critical thinking refers to skills and habits and to guiding students towards becoming critical thinkers. Attention should therefore be given to both aspects, i.e. skills and habits (see section 2.6.3). In order to develop critical thinking skills, appropriate educational objectives should be set, and thus Bloom’s revised taxonomy (see section 2.6.2) could be utilised. Similar to content in a degree programme, these skills and habits develop over time and should be distributed over programmes (see section 2.6.4.1). A suitable learning environment should be created to develop not only critical thinking skills but also good thinking habits. Web 2.0 technologies used to deliver content and create collaborative learning environments are needed (see section 2.6.4.2).

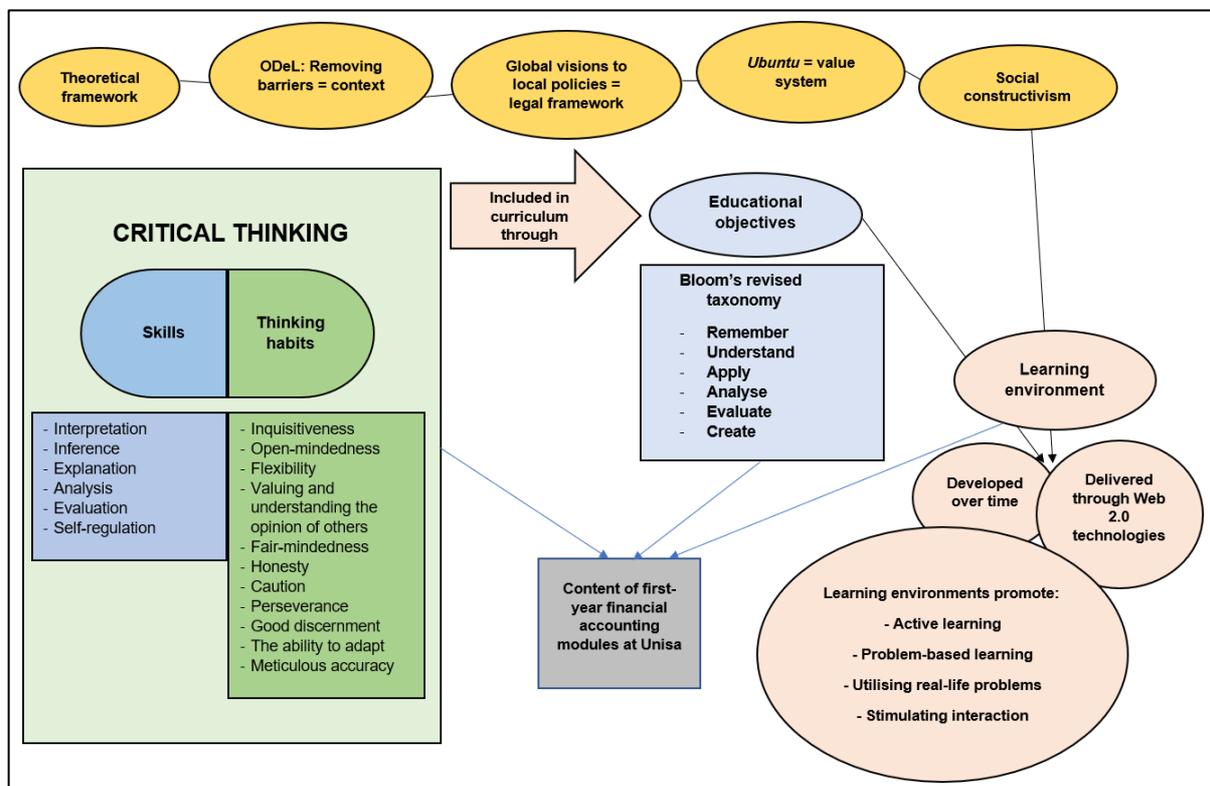


Figure 2.3: Initial conceptual framework

Source: Author's own compilation

2.8 CHAPTER SUMMARY

This chapter provided an overview of existing literature on critical thinking as concept, followed by a discussion of contextual considerations namely ODL as well as visions and policies relating to skills development. The theoretical framework was discussed and the need for critical thinking skills by the accountancy profession considered. The chapter concluded with a discussion of the educational development of critical thinking namely, a discussion of Bloom's revised taxonomy, critical thinking skills and attributes, scaffolding and teaching methods utilising Web 2.0 technologies to create a learning environment whilst applying principles of social constructivism.

It is evident from Chapter 2 that critical thinking is a complex and multi-dimensional concept that should be developed slowly and over time. Given the vastness of skills and attributes constituting critical thinking, not all skills would be relevant for teaching and learning in first-year financial accounting modules. Chapter 3 sets out the research methodology followed to determine the skills currently integrated into the written curriculum as well as the skills and attributes academics think should be included, and how these skills will best be developed.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Chapter 2 provided a review of literature regarding critical thinking skills. The development of critical thinking as concept (see section 2.2) was discussed followed by an outline of the context for the study (see section 2.3) and the theoretical framework including principles of African philosophy and social constructivism (see section 2.4). The need for the development of critical thinking skills by the accountancy profession was discussed next (see section 2.5), followed by a discussion of the educational development of critical thinking as concept, the practical implementation of teaching methods, namely the concept of scaffolding, the use of technology and teaching methods (see section 2.6). The chapter concluded with a presentation of the initial conceptual framework (see section 2.7).

Chapter 3 provides a detailed description of the rationale for the empirical research used in this study. The research design and methods, namely selection of participants, various aspects of data collection and analysis will be discussed. This will be followed by a discussion of the criteria for trustworthiness before concluding with the ethical measures taken into account throughout the study.

3.2 RATIONALE FOR EMPIRICAL RESEARCH

Critical thinking skills have become a point of discussion in the accountancy profession and are evident in the SAICA competency framework where the exit-level skills for newly qualified CAs are outlined (SAICA, 2017:42–43). It is generally accepted that it is not possible to develop skills through correspondence education where the transmission of information was the focus (Heydenrych & Prinsloo, 2010:14). With the transitioning of Unisa from a correspondence university to an ODeL university, it is now possible to develop various skills by following a student-centred approach and incorporating interactive technologies into the online classroom (Heydenrych, 2010:5; Unisa, 2016c:4). This opens the gap to explore which aspects of critical thinking should be developed in the first-year financial accounting curriculum in order to provide the

foundation from where these skills could be developed further to reach the exit-level competencies required by SAICA (SAICA, 2017:42–43). The present study therefore aimed to explore the development of critical thinking skills in first-year financial accounting modules whilst considering the ODeL and African context of the university.

3.3 RESEARCH DESIGN

In order to gain an in-depth understanding of the development of critical thinking skills and good thinking habits in the first-year financial accounting curriculum at an SA ODeL institution, a qualitative approach was chosen for the research. Qualitative researchers study a phenomenon in a natural setting in order to gain an understanding based on information collected through a variety of empirical material (Denzin & Lincoln, 2017a:10). This allowed the researcher to make use of interviews to gather data on the opinions and experiences of the academics involved in specific financial accounting modules as well as on the relevant study material to gain an understanding of critical thinking skills and attributes as applicable to first-year financial accounting.

The research paradigm or interpretive framework within which the qualitative researcher framed questions and interpreted information were informed by epistemological, ontological and methodological principles (Denzin & Lincoln, 2017a:19). The five major interpretive frameworks used in qualitative research are positivism, post-positivism, critical theory, constructivism and participatory action (Denzin & Lincoln, 2017b:97). A researcher using a constructivist framework aims to gain understanding and interpret a phenomenon in order to improve practice (Lincoln, Lynham & Guba, 2011:106). The constructivist framework was in line with the aims of this research project where an understanding of the development of critical thinking skills of first-year financial accounting students was sought in order to make recommendations for future practice.

The research type was that of a case study. Yin (2018:56) defines a case study as an empirical method, which entails a detailed study of a current phenomenon within its real-life context. The present study focused on the development of critical thinking skills of first-year financial accounting students at an ODeL institution in South Africa. As a financial accounting lecturer herself, the study was of particular interest to the researcher and was driven by a desire to know more about the development of critical

thinking skills within the specific context (ODeL) and the financial accounting subject field. The research therefore fell within the scope of an intrinsic case study (Creswell & Poth, 2018:99). The strengths of case study research include –

- the depth of the research that provides a holistic view of the phenomenon (Noor, 2008:1603);
- high conceptual validity and understanding of the context (Yin, 2016:383); and
- the process and causes of the phenomenon (Flyvbjerg, 2011:314).

One of the pitfalls of case study research is collecting either too little or too much data (Crowe et al., 2011:9). This was mitigated by focusing data collection in a way that aligned with the research questions and objectives.

3.4 RESEARCH METHODS

Research methods are the means used to investigate the problem identified in the study. Accordingly, the methods used describe the data collection methods applied to achieve the aims of the study. Therefore, the selection of participants, data collection through semi-structured interviews and document analysis are discussed next.

3.4.1 Selection of participants

The present study focused on gaining understanding regarding the integration of critical thinking skills into two first-year financial accounting modules, namely FAC1502 and FAC1601 (see section 1.2.3). The research focus and limited scope of the study necessitated that participants be chosen based on in-depth knowledge of either FAC1502 or FAC1601 or their current positions at Unisa enabling them to provide insight into decisions taken regarding critical thinking included in the curriculum.

For interviews, the number of participants is determined by the research question (Taylor et al., 2016:107–108). Kvale (1996:101) states that the answer is simply to “interview as many subjects as necessary to find out what you need to know”. This means that a level of saturation should be reached where adding more participants would not contribute anything new to the answers already given or the information already supplied.

Purposive sampling was used for this research project as the researcher selected participants based on the purpose of the study (Guest, Namey & Mitchell, 2013:48). In order to ensure information-rich data, a total of fourteen academics from the Department of Financial Accounting were identified based on either teaching experience on FAC1502 and/or FAC1601, or their involvement in decision-making regarding the curriculum and delivery of these modules. In terms of involvement in decision-making regarding the curriculum, module leaders, co-ordinators, second-year academics, the chair of the Department of Financial Accounting and the director for the School of Accountancy were identified. These fourteen academics were invited via electronic mail to participate in the study. Twelve of the academics accepted the invitation. The participants were divided into three groups. The first group consisted of academics involved in the teaching and learning environment of the two first-year financial accounting modules and therefore could provide detailed information on the skills and habits being developed through the curriculum as well as how it is developed. The second group consisted of second-year financial accounting lecturers who could provide information on the skills and habits they expect students to possess by the time they enrol for second-year financial accounting. The third group consisted of academics involved at various levels of decision-making regarding the curriculum. They were able to provide a more holistic view in terms of the skills and habits that should be included at various levels, and how those should be developed in order to reach the ultimate objective set in the SAICA competency framework.

Twelve academics were interviewed⁷, after which the data of two interviews were excluded since it did not contribute towards answering the research questions. Subsequently, the interviews of ten academics were transcribed and analysed. The group of participants were diverse and included both male and female participants, as well as participants from different cultural groups. In order to protect the identities of the participants, detailed information regarding the group within which a participant fell, is not provided. The information is only discussed holistically for the group (see section 4.2).

⁷ The interviews were conducted from November 2019 to January 2020.

3.4.2 Data collection

Data collection consists of a series of activities (see Figure 3.3). If followed, this will provide the researcher with the information needed to answer the research questions (Creswell & Poth, 2018:148). Due to the depth of understanding the researcher strives to obtain during case study research, multiple data collection methods are utilised (Creswell & Poth, 2018:99; Yin, 2018:180). Interviews with key persons, document analysis and observations are the usual sources of information in case study research (Swanborn, 2010:73). Documents are viewed as a very stable source of information outside the influence of the researcher (Swanborn, 2010:73). Interviews, on the other hand, provide more personal views, insights and opinions, relating the case to personal experiences (Swanborn, 2010:73). Data triangulation for this study was achieved through methodological triangulation (Fischer & Van de Bovenkamp, 2019:110), which refers to the use of multiple methods to collect the data for the study. A combination of interviews (section 3.4.2.1) and document analysis (section 3.4.2.2) was chosen to collect the data for the present research project.

3.4.2.1 *Semi-structured interviews*

In-depth interviews are regarded as conversation-based, social interaction where the researcher converses with people with experience or knowledge about a certain problem or topic (Rubin & Rubin, 2012:4). The aim of qualitative interviews is to gain an understanding of the research topic from the participant's point of view (Creswell & Poth, 2018:163–164; Guest et al., 2013:113). Semi-structured interviews comprise one of the major forms of in-depth interviews where the researcher prepares a number of questions and based on the responses received, asks follow-up questions in the quest for information regarding the specific topic under review (Rubin & Rubin, 2012:31).

In order to reduce any discomfort that the participants might experience during the interview, they were given a choice regarding the place, date and time for the interview to take place. The majority of the interviews took place in the offices of the participants, whilst two participants chose to have the interviews in the office of the researcher. The interviews varied in length (depending on the information the participants wished to convey to the researcher) with the shortest being 12 minutes and the longest 1 hour

and 45 minutes. The interview guide used for the interviews comprised six main questions, with sub-questions under each (see Annexure A). The interview questions were organised in such a manner that it ensured that the research question and sub-questions were addressed.

During the interviews, it was important to have adequate recording procedures in place (Creswell & Poth, 2018:165). An electronic recording device was used to record all the interviews for the study. Office doors were closed, and mobile phones were put on silent to reduce noise levels during the interview in order to ensure optimal recording quality within the setting provided. The audio files were uploaded for transcription through Trint.com (see: <https://trint.com/?cn-reloaded=1> for more information), a website that uses artificial intelligence to transcribe audio files. The researcher worked through each transcription together with the audio files in order to ensure the correctness of the transcriptions before each transcript was referred back to the participant for member checking (Harper & Cole, 2012:1) before commencing with the data analysis.

3.4.2.2 Document analysis

Selecting and reviewing documents is one of the research methods that can be used during qualitative research studies (Dey, 2005:15). Content analysis is a flexible and systematic process during which text from the selected documents is analysed (Hsieh & Shannon, 2005:1277). The text of the documents is examined in order to gain an understanding of the content or the contextual meaning of the text (Hsieh & Shannon, 2005:1278). Analysing documents is cost-effective, time-efficient and less obtrusive than, for example, interviews (Bowen, 2009:31). Documents as data source are perceived as more credible and less biased than data collected through interviews (Janis, 2019:329). It is important for the researcher to define the selection criteria and the reasons for focusing on specific extracts (Dey, 2005:105). The relevant study material of FAC1502 and FAC1601 (as defined in section 1.1) contained valuable information pertaining to the thinking skills students require to master the content. It was therefore decided to make use of documents as supplementary data collection method to verify the information obtained through the semi-structured interviews with academics involved in the two modules. The educational objectives included in the relevant study material were identified for further analysis. As indicated in Table 2.2,

the educational objectives of Bloom's revised taxonomy can be linked to the various critical thinking skills identified in the APA Delphi study (Facione, 1990:2–13). Figure 3.1 provides an example of the educational objectives included in the FAC1502 study guide in Study unit 1: The nature of accounting theory, principles, accounting policy, practice and procedures.

Now that you have studied this study unit, can you:

- describe the importance of financial information as a basis for decision making?
- discuss the different users of financial information and their needs?
- state the different forms of ownership?
- discuss the nature of accounting?
- explain the difference between financial and management accounting?
- name the qualitative characteristics of financial statements?
- explain what is meant by the accounting policy?
- explain what is meant by the disclosure of the accounting policy?
- explain what is meant by the international financial reporting standards?
- explain what is meant by the accounting standards and statements?

Figure 3.1: Example of objectives included in the study material

Source: Unisa (2017:11)

3.4.3 Data analysis

Analysis of data in case study research can be done through the identification of themes that provide a description of the case (Creswell & Poth, 2018:105). In this section, the analysis of the interview data is discussed (see section 3.4.3.1), followed by a discussion of the analysis of documents (see section 3.4.3.2).

3.4.3.1 Analysis of interviews

Saldaña's (2016:14) conceptual codes-to-themes-to-theory model for qualitative data provides a visualisation of the process followed during the analysis of the interview data (see Figure 3.2). This model indicates how the raw data are analysed through coding from where categories are identified and subsequently the emerging themes (Saldaña, 2016:14).

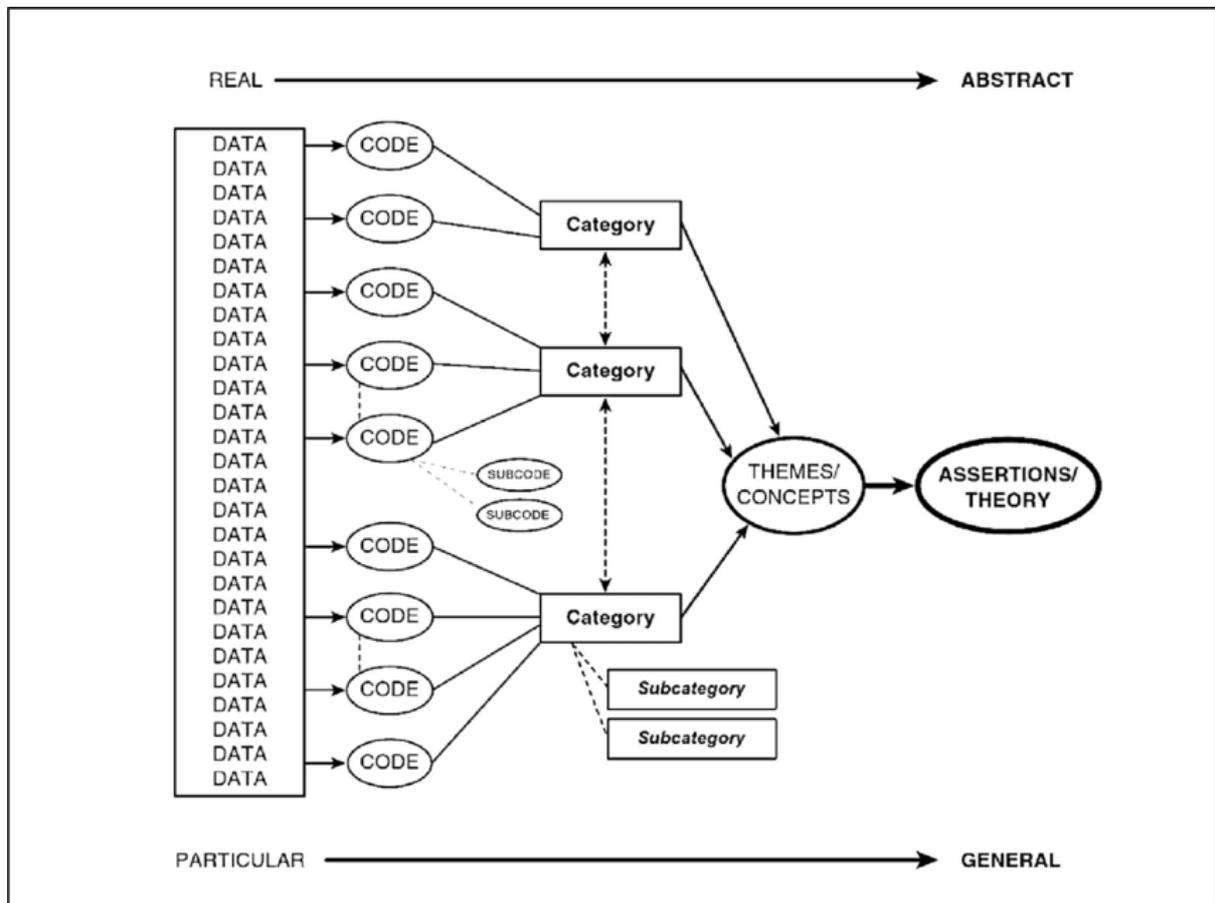


Figure 3.2: Conceptual codes-to-themes-to-theory model for qualitative data

Source: Saldaña (2016:14)

The researcher compiled a detailed codebook (see Saldaña, 2016:27) based on the conceptual framework of the study (see section 2.7). After reading through all the interview transcripts, additional codes were added. Prefix coding was used followed by specific analytical phrases that uncovered the views of the participants. The researcher provided the IC with a detailed codebook, a conceptual framework (see Figure 2.3), Chapter 1 and the interview transcripts. Independent coding can be used for the “cross checking of coding strategies ... of data by independent researchers” (Barbour, 2001:1116). The IC read through all the documents (soft copies) with the purpose to form ideas regarding the overall messages and meanings conveyed through the data. Thereafter, the IC reviewed the codebook as created by the researcher and found it to be accurate and representative of the research questions, conceptual framework and interview schedule.

The IC uploaded the transcripts into the computer-assisted qualitative data analysis software (CAQDAS) ATLAS.ti™ 8 (hereafter ATLAS.ti). While reading the feedback of the participants, deductive coding was done by the IC, using the codebook provided by the researcher. The IC used directed content analysis coding (Hsieh & Shannon, 2005:1281), which allowed for theory–concept-driven coding. Since meaning within context is important, lumping of quotations (Saldaña, 2016:24) was used as strategy resulting in larger quotations being coded according to the codebook. Saldaña (2016:24) cautions that lumping could lead to “superficial analysis” if not done in accordance with conceptual words or phrases, but on the other hand, splitting data too much will become overwhelming when categorising the codes. Lumping was therefore used to balance the highly detailed codebook.

Independent coding was done in three cycles to refine the precoding. During the first coding cycle, many of the initial codes included in the codebook were not used because they were too specific, focusing on minutiae. The second coding cycle was used to clean up the coding through checking meaning within the context, merging, re-naming and deleting unused codes. The third coding cycle was used to ensure the alignment of the codes against the respective quotations. The IC provided the researcher with various documents after completion of the independent coding (see Table 3.1).

Table 3.1: Reports created by the independent coder (IC)

Reports	Use
1. All codes and quotations – FULLEST report	Main document (Word format), which shows all the codes and how they are linked to the transcripts, i.e. the data (transcript details are called quotations).
2. Reports on each group e.g. all codes and quotes on 14 groups.	The term 'categories' are used to review what the categories reveal in relation to the literature and then to arrive at themes and findings Reports (Word format) may be used as electronic annexures
3. Network views on all groups	<i>Upon request</i> – some of these groups are very large
4. Final report of all codes with code groups and code meanings as well as 'counts' – counts are not frequencies	List of codes (Excel format) with groups as categories, groundedness and meaning of the codes
5. Code document counts: codes with number of times that the code was applied to a quotation in the transcripts, and per participant (groundedness)	Present code and totals as data (Excel format) with explanation that these numbers enumerate the qualitative data but are not frequency counts in statistical sense
6. Co-occurrence report	Detailed report (Excel format), which shows the number of times one code is used simultaneously with another code for the same piece of text – in other words, there is a strong relationship between two codes There were not many co-occurrences in this study, but those from 4 above were important
7. Memo on coding	Stand-alone document (Word format).

Source: IC memo

The researcher read the reports provided by the IC in order to obtain a holistic view of the analysed data. As per the recommendation of the IC, the researcher read the code report of each category in order to identify themes from each category. The themed reports provided a good basis from where the themes were carefully identified. These themes are discussed in more detail in section 4.3.2.

3.4.3.2 Analysis of documents

The relevant study material intended for FAC1502 (2019) and FAC1601 (2019) was analysed using the taxonomy table created by Anderson and Krathwohl (2002:216) (see Table 3.2). The verbs and content of each educational objective set out in the study guides (summary in tutorial letter 101), compulsory assignments (in tutorial letter 101) and the past examination papers provided to students on *myUnisa* (second semester 2019) were analysed. Although certain tasks⁸ contained elements that fell under more than one category, each objective was allocated to the category that best described the task in totality. Various word lists exist, categorising verbs into the six levels of Bloom's revised taxonomy (Ferlazzo, 2009; Heer, 2015:2, 3; Stanny, 2016:5) and were used as guidelines in the analysis of the educational objectives used in the study material.

⁸ For example, preparing a set of financial statements consists of knowing the framework of the statements (e.g. remember factual knowledge), understanding various concepts (e.g. differentiating between assets, liabilities and equity) and the application of various processes and rules (e.g. calculating depreciation).

Table 3.2: Bloom’s revised taxonomy applied to the relevant study material

Knowledge dimension	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual knowledge	State Name List Define Describe Mention	Describe Discuss Explain Distinguish	Show			
Conceptual knowledge	Explain	Describe Explain Discuss Distinguish	Calculate Show	Calculate		
Procedural knowledge		Explain	Convert Prepare Record Show	Identify and record	Reconcile	
Metacognitive knowledge						

Source: Table framework (Krathwohl, 2002:216); content author’s own compilation from various sources (Ferlazzo, 2009; Heer, 2015:2, 3; Stanny, 2016:5)

The most common verbs that were identified from the relevant study material have been included in Table 3.2. Certain verbs, for example ‘calculate’ is shown under both ‘apply’ and ‘analyse’. The reason is that it is not only the verb that determines the objective to be achieved but also the content. On a first-year level, students are required to calculate various figures, for example depreciation, which are all included under ‘apply’. However, calculations can also be done to analyse data for evaluation purposes and those calculations are included under ‘analyse’. In order to differentiate between the different knowledge levels, the present research compared each objective with the definitions of the levels (see section 2.6.2). The objective “discuss the different users of financial information and their needs” was classified as ‘understand’ of factual knowledge since it related to foundational knowledge relating to the subject. On the other hand, the objective “discuss what inventory consists of and how inventory is presented in the statement of financial position” was classified as ‘understand’ of conceptual knowledge, since it related to classification, principles and structures in financial accounting.

3.5 TRUSTWORTHINESS

All research makes use of criteria to judge the quality of the research (Korstjens & Moser, 2018:121). In quantitative research, internal validity, generalisability, reliability and objectivity are used, whereas qualitative researchers use the criteria of trustworthiness of which Lincoln and Guba's (1985) criteria (credibility, dependability, transferability and confirmability) are the best known (Korstjens & Moser, 2018:121) and these latter criteria are discussed next.

3.5.1 Credibility

Credibility requires that the research tasks be performed in such a way that the probability that the research findings are credible is improved (Lincoln & Guba, 1985:296). Korstjens and Moser (2018:121) identify data triangulation, investigator triangulation, method triangulation and member checking as strategies one could employ to improve the credibility of qualitative research.

Data triangulation refers to the use of multiple data sources in time, space and person (Korstjens & Moser, 2018:121). During the interviews, data triangulation was achieved through data gathered from academics in different roles in terms of FAC1502 and FAC1601 (see section 3.4.2.1). Investigator triangulation refers to the use of two or more researchers to do coding, analysis and interpretation (Korstjens & Moser, 2018:121). Although the present study was conducted by only one researcher, an attempt was made to improve credibility through the use of an expert IC. Method triangulation refers to the use of multiple methods during data collection (Korstjens & Moser, 2018:121). This was achieved by using semi-structured interviews (see section 3.4.2.1) as primary source of data supplemented by the analysis of module documents (see section 3.4.2.2) and conducting a literature review (see Chapter 2).

Within qualitative research, it is often the case that researchers collect and analyse the data themselves, opening the door for researcher bias to influence the study (Birt, Scott, Carvers, Campbell & Walter, 2016:1802). Member checking can be used to improve the accuracy, credibility and validity of the data recorded during the interviews (Harper & Cole, 2012:1) and therefore reduces the possible influence of researcher bias (Birt et al., 2012:1802). Member checking can achieve the validation of the correctness of interview transcripts by requesting participants to read the transcript of

their answers (Doyle, 2007:901). Participants can then request minor corrections to be made as needed (Doyle, 2007:901). The transcripts of the interviews were e-mailed to each participant for verification purposes. Each participant was requested to read the transcript and to verify the accuracy and authenticity of the written records and to request changes if necessary. None of the participants requested any changes to be made. Subsequently, all transcribed interviews were e-mailed to the IC for analysis of the data.

3.5.2 Dependability

Dependability refers to consistency, predictability and accuracy in the research process (Lincoln & Guba, 1985:292). In essence, research is dependable (reliable) if it can withstand the test of replication (Lincoln & Guba, 1985:292). In order to be able to replicate any qualitative study, keeping an audit trail is of the utmost importance (Korstjens & Moser, 2018:121). The audit trail entails keeping record of the research process from the start of the project up to the reporting of the findings (Korstjens & Moser, 2018:121). The research methods – including the selection of participants (section 3.4.1), data collection methods (section 3.4.2) and the analysis of the data (section 3.4.3) – were described in detail.

3.5.3 Transferability

Transferability refers to the possibility of transferring the findings from a qualitative study to another context (Korstjens & Moser, 2018:121; Lincoln & Guba, 1985:296). Transferability is achieved through the rich description of the participants and the research process to enable other researchers to judge whether the findings of the current research are transferable to their own setting. Therefore, the context (section 1.2) and the research process (section 3.4) were described in detail.

3.5.4 Confirmability

Confirmability refers to the degree to which other researchers will be able to confirm the findings of a particular study and confirm that the conclusions drawn were based on the data and not on the biases of the researcher (Korstjens & Moser, 2018:121). After the transcription of the interviews, the participants were requested to confirm the data provided in the interviews (refer to member checking as discussed in section

3.5.1). Furthermore, an external expert in qualitative data analysis was used to analyse the data received from the interviews. The data received from the expert were evaluated by the researcher before reporting on the findings. This was done in order to reduce any possible biases from the researcher during the analysis of the data and improve confirmability.

3.6 ETHICAL MEASURES

Considering ethics forms part of the features of good qualitative research studies (Creswell & Poth, 2018:48). This entails obtaining permission from the relevant institutional review committees as well as considering and addressing any emergent ethical issues during the study (Creswell & Poth, 2018:48). Figure 3.3 illustrates the activities required during data collection and indicates that ethical measures should be considered throughout.

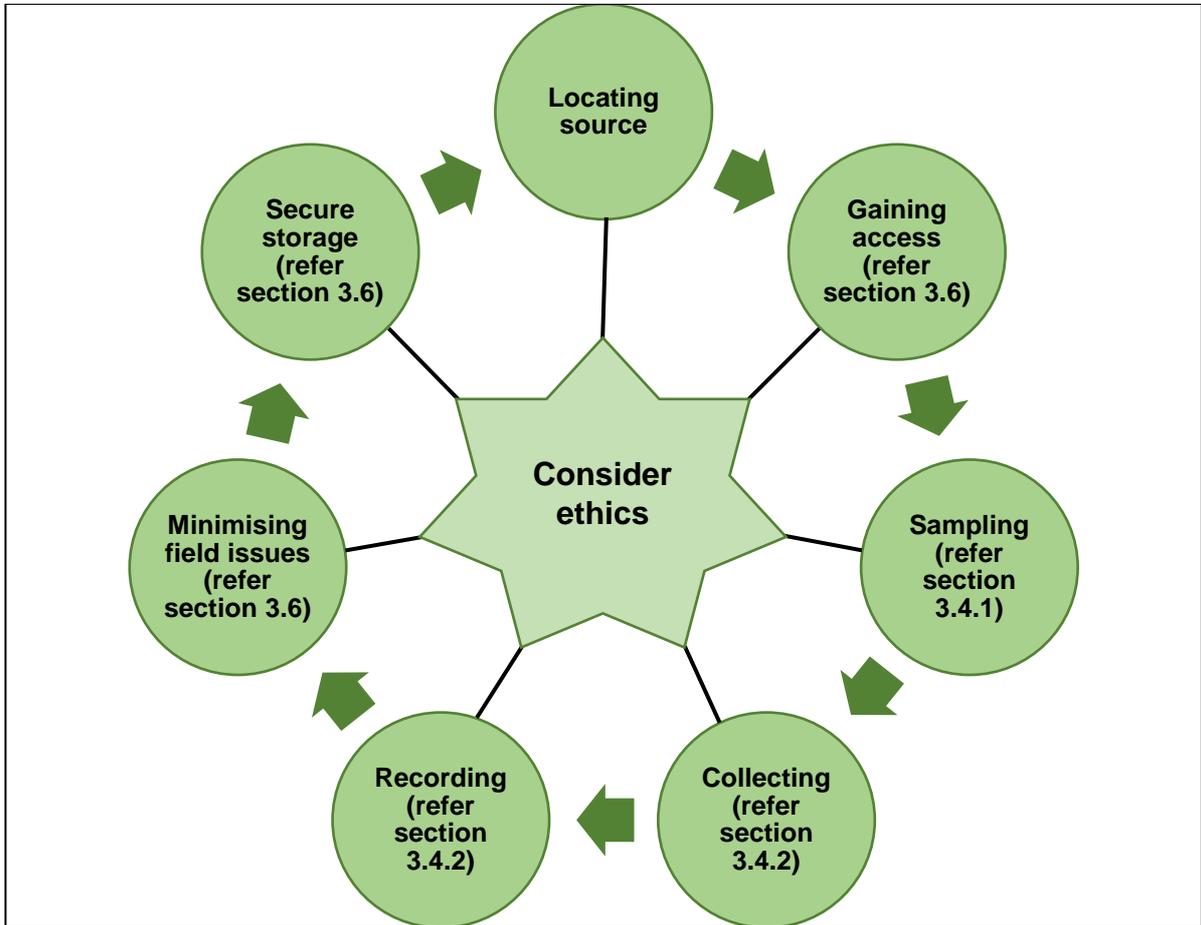


Figure 3.3: Data collection activities

Source: Adapted from Creswell and Poth (2018:149)

Ethical clearance was firstly obtained from the CEDU (see Annexure B) at Unisa. Secondly, ethical clearance was obtained from the Research Permission Subcommittee (RPSC) of the Senate Research, Innovation, Postgraduate Degrees and Commercialisation Committee (SRIPCC) at Unisa (see Annexure C). This was necessary since the study involved the participation of Unisa staff members and the analysis of the content of official Unisa study material.

Informed consent should be obtained from participants whenever it is possible (Flick, 2018:88). All participants were requested to complete informed consent forms before they were interviewed. Participants' information sheets (see Annexure D) were provided to participants together with the informed consent forms (see Annexure E). Participants were informed of the purpose of the study, the reason for receiving an invitation, the nature of participation, possibilities of withdrawing, potential benefits as

well as possible negative consequences of participating in the study. Ensuring the anonymity of participants could also be of major concern during the analysis of data (Flick, 2018:91). In order to address this, the anonymity of participants was insured by using code numbers for each participant after the interviews had been conducted and transcribed.

The researcher also considered the secure storage of data (Creswell & Poth, 2018:149), and therefore electronic information will be stored on a password-protected computer. The electronic copies will be permanently deleted from the hard drive of the computer by using an appropriate software program after five years.

3.7 CHAPTER SUMMARY

This chapter provided an in-depth discussion of the rationale (see section 3.2), the research design (see section 3.3) and the methodology (see section 3.4) of the study. This comprised a discussion of the selection of participants, methods used to collect data as well as the analysis of the data. Consideration was also given to the various elements contributing towards the trustworthiness of the study (see section 3.5) as well as the ethical considerations (see section 3.6). Chapter 4 provides an in-depth discussion of the findings of the empirical investigation.

CHAPTER 4

DATA ANALYSIS AND FINDINGS

4.1 INTRODUCTION

Chapter 3 provided an in-depth discussion of the rationale, the research design and the methodology of the study. Consideration was also given to the various elements contributing towards the trustworthiness of the study as well as the ethical measures to which the study adhered. Chapter 4 provides an in-depth discussion of the findings of the empirical investigation. A general overview of participant information will be given followed by a discussion of the findings from the analysis of the relevant study material. Lastly, various themes that emerged from the data gathered through the interviews will be discussed.

4.2 GENERAL PARTICIPANT INFORMATION

During the first part of each interview, general information on the participant was obtained. As indicated in section 3.4.1, this study included academics involved in the teaching and learning activities of FAC1502 and FAC1601, academics teaching second-year modules and academics involved in decision-making regarding the curriculum of the applicable modules. Figure 4.1 indicates the distribution of the various participants from each of the pre-determined categories.

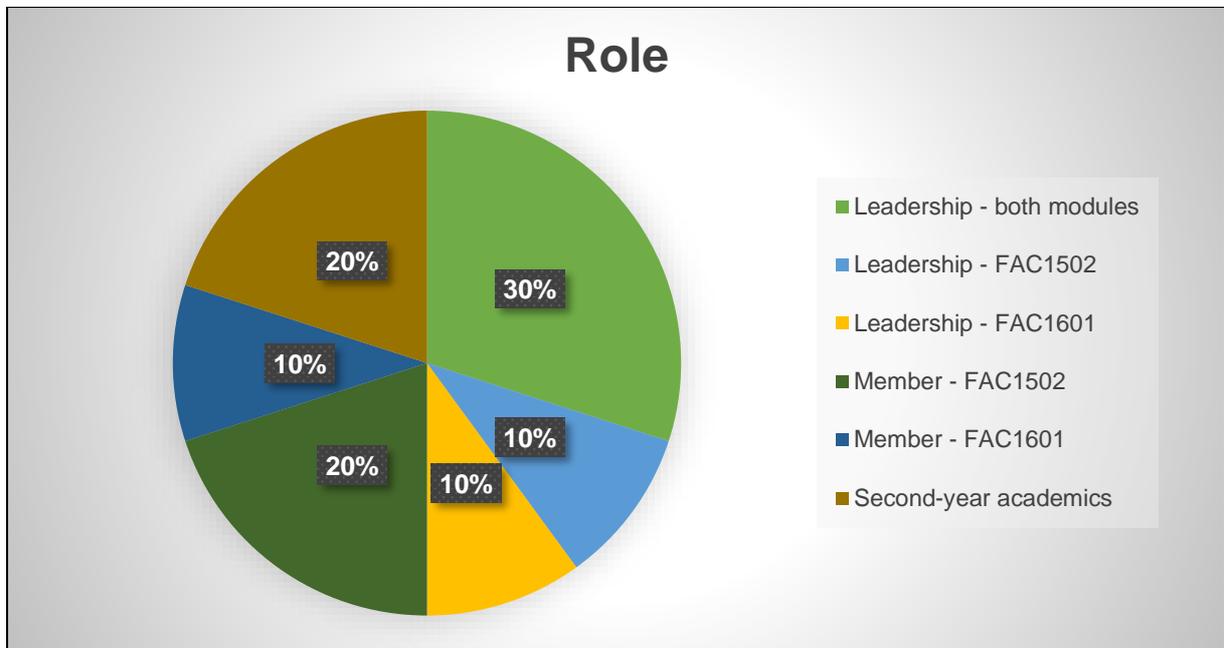


Figure 4.1: Academic role of participants

Source: Author's own compilation

Figure 4.1 indicates that 30% of the participants were able to share their views relating to both FAC1502 and FAC1601 in their capacity as leadership influencing decisions taken regarding these modules. The leadership of both modules was interviewed as well as team members on both modules. Lastly, second-year academics were interviewed providing insight from their perspective regarding the exit-level critical thinking skills first-year students should have after completing these two modules. Therefore, participants chosen from each category agreed to participate in the research project. This was important in order to obtain a holistic and balanced view of the development of critical thinking on a first-year level. The academic and professional qualifications of the participants are indicated in Figure 4.2 whilst the years' experience (total and per module) is indicated in Figure 4.3.

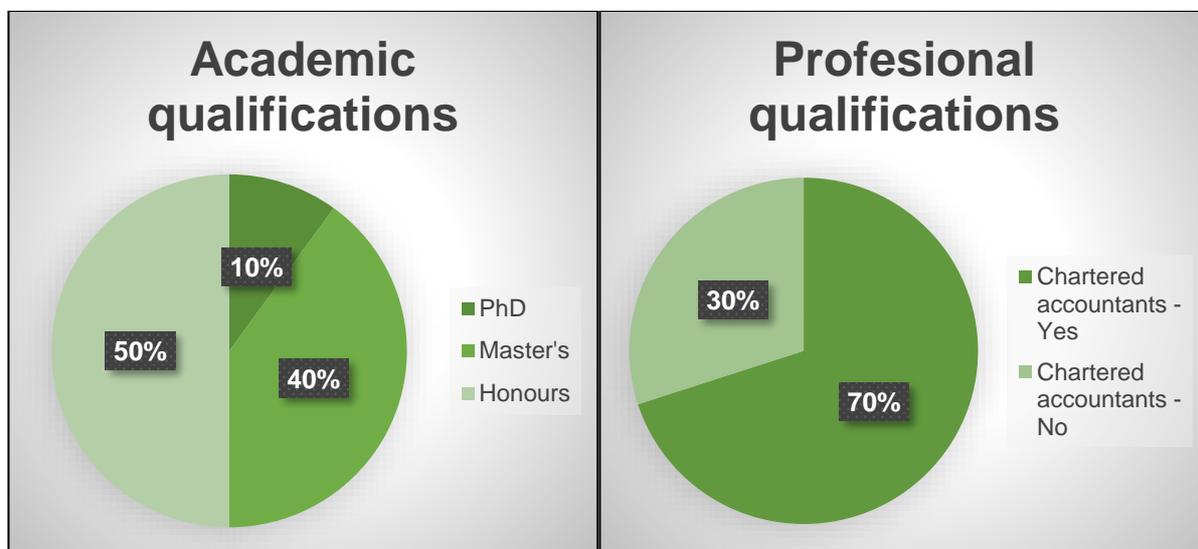


Figure 4.2: Highest academic and professional qualifications of participants

Source: Author's own compilation

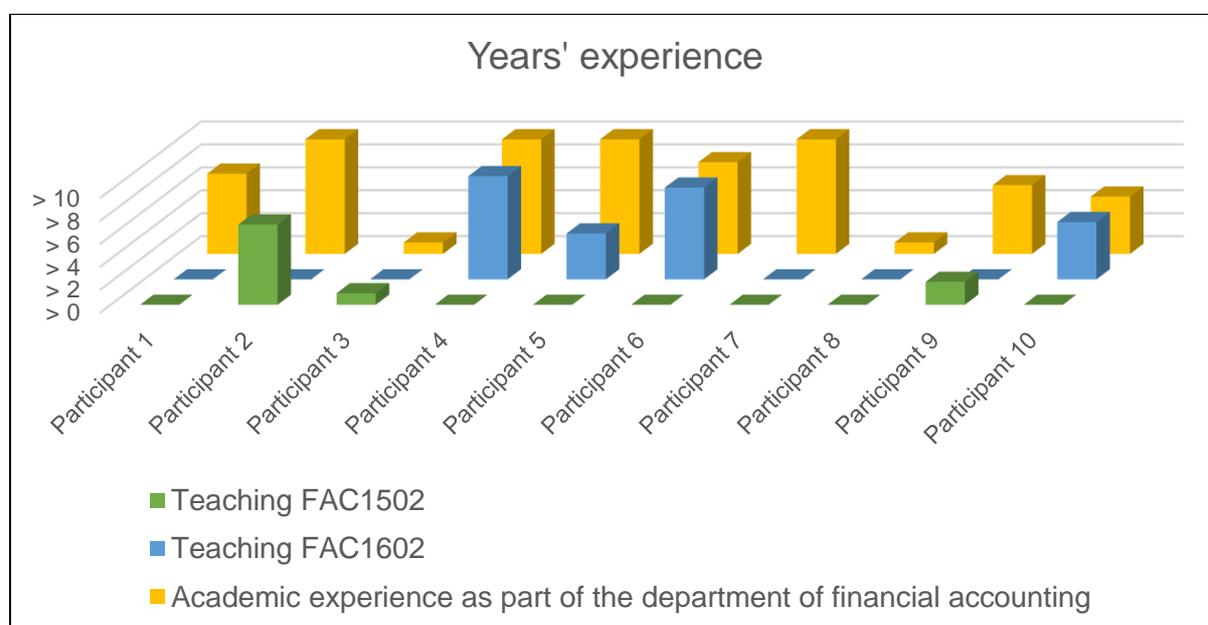


Figure 4.3: Years' experience of participants

Source: Author's own compilation

As is evident from Figure 4.3, 50% of participants had only an honours degree, 40% had a master's degree and 10% had completed a doctorate. In addition, 70% of participants were also qualified CAs. The majority of the participants had more than four years' teaching experience at Unisa. The qualifications and experience of the participants reflect the credibility of their opinions as accounting experts in the ODeL teaching and learning environment at Unisa.

4.3 RESEARCH FINDINGS

The researcher decided to discuss the findings of the interviews and document analysis separately, since at the time the study was conducted, students could only interact with the printed material received on the two modules. It was possible for students not to make use of any of the online learning interventions or other support services provided on the modules. The documents therefore provided insight into what students opting to study through the printed material alone would have encountered. Although the interviews were the primary data source and the documents, the supplementary data source, the researcher decided to share the findings of the document analysis first. The reason is that the analysis of the documents only focused on what was included in the written curriculum regarding the development of critical thinking skills at the time of the study, whereas the interviews provided a richer and broader discussion of all the research questions and thus built on the findings of the document analysis.

4.3.1 Findings from document analysis

The findings from the document analysis for FAC1502 are presented first before moving on to the findings for FAC1601. This is presented in the order students would have enrolled for these modules within the SAICA-accredited programme at Unisa. Students were therefore firstly be exposed to the technical knowledge and skills developed through the FAC1502 written curriculum before commencing with FAC1601.

4.3.1.2 FAC1502 – study guide, past papers and assignments

The purpose of the FAC1502 module is to teach students foundational knowledge of financial accounting. The educational objectives in the study guide of this module (see Figure 4.4) reflect the purpose, and therefore the majority of objectives fall within the scope of the lower three levels of Bloom's revised taxonomy, namely remember, understand and apply. Table 4.1 indicates the main verbs for each learning unit. Calculate, describe, record and prepare are the verbs most often used to describe the objectives.

Table 4.1: FAC1502 learning units

Learning unit (Unisa, 2017)	Examples of verbs
LU1 ⁹ : The nature of accounting theory, principles, accounting policy, practice and procedure	Describe, discuss, explain and name, and state
LU2: The financial position	Describe and calculate
LU3: The financial performance	Describe and calculate
LU4: The double-entry system and the accounting process	Prepare
LU 5: Processing accounting data	Prepare
LU 6: Adjustments	Calculate, list, prepare, record and show
LU 7: The closing-off procedure, determining profit of an entity and preparing financial statements	Calculate, prepare and record
LU 8: Cash and cash equivalents	Describe, prepare, reconcile
LU 9: Trade and other receivables	Calculate, prepare, record, show
LU 10: Inventory	Discuss, explain
LU 11: Property, plant and equipment	Calculate, define, explain, record
LU 12: Other non-current assets	Calculate, describe, explain, record
LU 13: Current liabilities	Calculate, explain, reconcile, show
LU 14: Non-current liabilities	Describe, record, show
LU 15: Financial statements of a sole proprietorship	Calculate, describe, record, show
LU 16: Non-profit entities	Prepare, record
LU 17: Incomplete records	Calculate, convert, define, discuss, prepare

Source: Author's own compilation

The learning units in the study guide are set up in such a way that content builds up from the foundational concepts and rules, namely the accounting equation (learning units 1 to 4 [see Table 4.1]) and definitions of the various elements (assets, liabilities and equity). Students gain a thorough understanding of the first three learning units, indicated by the use of verbs, for example explain, describe and discuss.

From learning unit four onwards, the focus moves from understanding towards application. Studying the double-entry system (learning unit 4), forms the foundation for the application in later learning units. Students are required to study accounting processes related to the collection and processing of financial information. Students are required to process financial information and therefore to prepare subsidiary

⁹ LU1 refers to learning unit 1 in the study guide.

journals, general ledger accounts, trial balances and financial statements. Various methods and systems are explained, for example inventory systems and valuation methods. Students are required to understand these and apply the principles in different scenarios. In FAC1502, however, they are not yet required to choose the most appropriate system or method; these are given in each scenario.

At a very basic level, FAC1502 students are required to analyse information in order to differentiate between relevant and irrelevant information in a given scenario, as well as calculate some percentages that could be used for evaluation (learning unit 7). Students are also required to study bank reconciliations (learning unit 8) as well as debtors and creditors reconciliations (learning units 9 and 13). In order to complete these reconciliations, students are required to evaluate the information given and to complete a checking process to identify transactions that were not recorded in the subsidiary journals or which do not yet appear on the bank statement.

Figure 4.4 indicates the distribution of the various verbs used relating to each level of Bloom's revised taxonomy. The create level is not included since no objective fell in this category. It is clearly indicated that the verbs relating to application are predominant, indicating the practical nature of the subject matter.

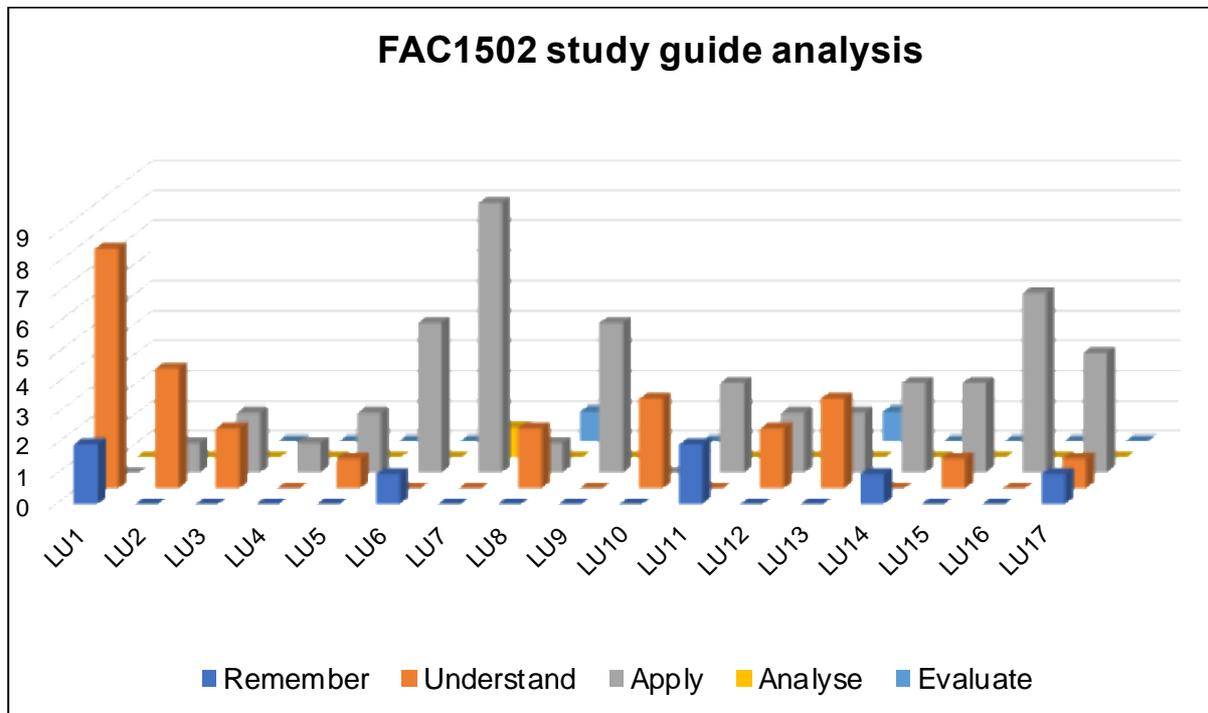


Figure 4.4: FAC1502 study guide objectives

Source: Author's own compilation

Table 4.2 below also demonstrates the pre-dominance of application but, in addition, indicates that studying accounting requires students to obtain factual, conceptual and procedural knowledge. Objectives like “state the different forms of ownership” were categorised as factual knowledge. “Describe the double-entry system” relates to financial accounting concepts and the relationships between those concepts, and were therefore categorised as conceptual knowledge (Anderson & Krathwohl, 2001:27). Objectives like “prepare a cash receipts journal, taking Value-Added Tax into account” refer to a process of recording of transactions, and were therefore categorised as procedural knowledge (Anderson & Krathwohl, 2001:27). The distribution of objectives between the first three knowledge levels is very even. Objectives falling within the scope of metacognitive knowledge (awareness of one’s own thought processes) (Anderson & Krathwohl, 2001:27) are absent. Facione (1990:13) indicates the importance of awareness of one’s own thinking in order to become a good critical thinker.

Table 4.2: FAC1502 study guide objectives

Knowledge dimension	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual knowledge	6	13	4			
Conceptual knowledge	1	12	15	1		
Procedural knowledge		2	30		2	
Metacognitive knowledge						

Source: Author's own compilation

Students had access to five past examination papers, which are uploaded on the myUnisa platform (see Table 4.3). The solutions to past examination papers are however not provided to students. They are able to use these papers as part of their learning activities in preparation for their final assessment in the module. The educational objectives of these past examination papers as set out in Figure 4.5 and Table 4.4 follow a similar pattern as the objectives in the study guide. The focus is on understanding and application, although basic analysis and evaluation skills are also required. The practical nature of financial accounting is further demonstrated in the focus on application in the past examination papers. Although objectives from all knowledge domains are included in the past examination papers, the focus lies with the procedural knowledge domain.

Table 4.3: FAC1502 past examination papers information

Past examination paper	Number of questions	Examples of verbs
October 2017	4	Calculate, complete, prepare
May 2018 (Paper 1)	4	Complete, prepare
May 2018 (Paper 2)	4	Classify, complete, prepare
October 2018	4	Complete, prepare
May 2019	5	Calculate, complete, prepare

Source: Author's own compilation

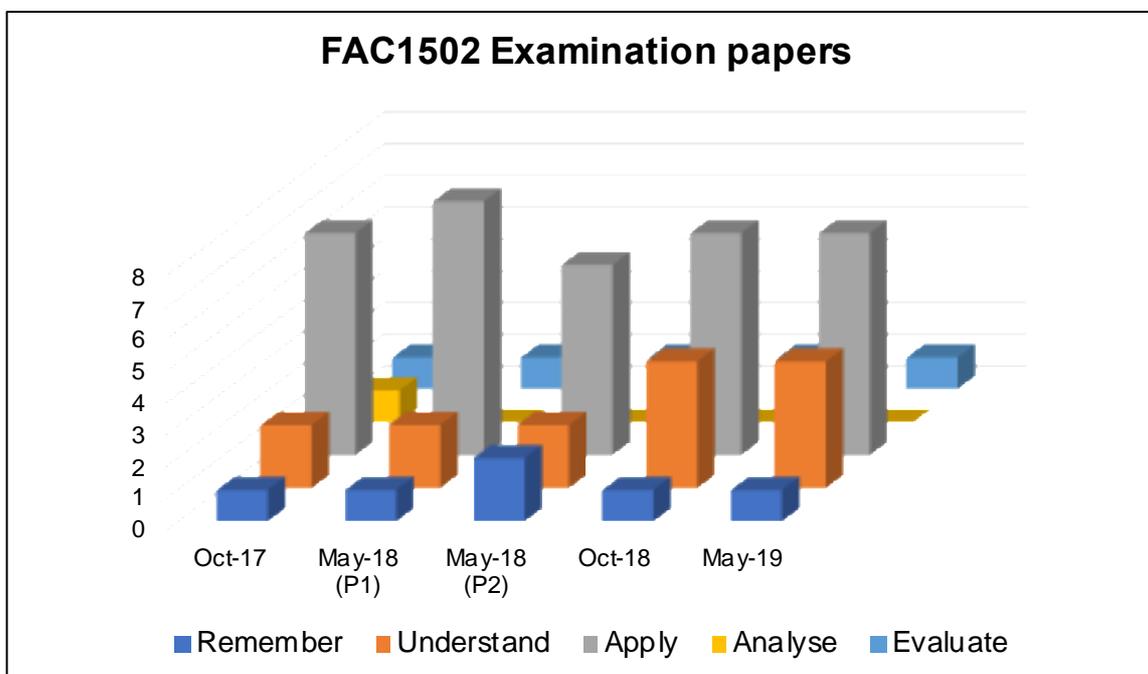


Figure 4.5: FAC1502 examination objectives

Source: Author's own compilation

Table 4.4: FAC1502 past examination paper objectives

Knowledge dimension	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual knowledge	6	2	1			
Conceptual knowledge		12	3			
Procedural knowledge			31	1	5	
Metacognitive knowledge						

Source: Author's own compilation

Similarly, the compulsory assignments of FAC1502 focus on application (see Figure 4.6 and Table 4.5). Each compulsory assignment consisted of fifteen multiple-choice questions (MCQs). Students were required to demonstrate that they had required factual knowledge and understood the content, while the questions, focusing purely on memory and understanding, were limited. The application-type questions test students' ability to record financial information and various calculations, for example

depreciation. Students were not required to demonstrate analysis skills or evaluation skills when completing the compulsory assignments.

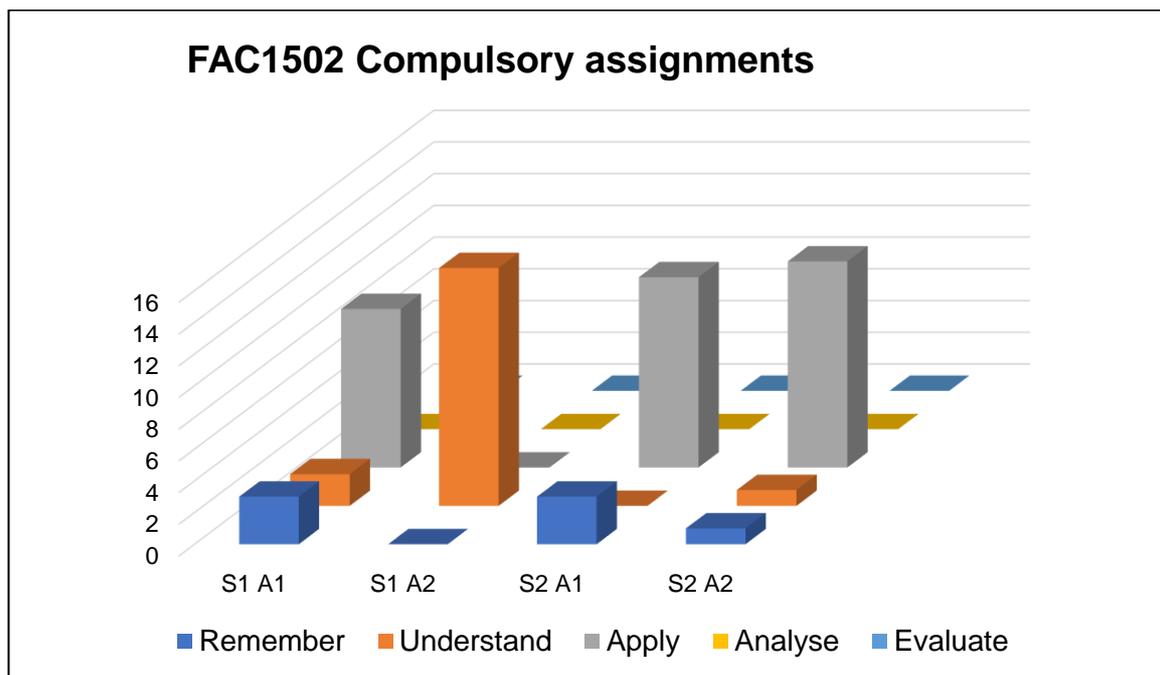


Figure 4.6: FAC1502 compulsory assignment objectives

Source: Author's own compilation

Table 4.5: FAC1502 compulsory assignments

Knowledge dimension	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual knowledge	7	1	5			
Conceptual knowledge		2	34			
Procedural knowledge			11			
Metacognitive knowledge						

Source: Author's own compilation

Figure 4.7 shows an example of one question from the first compulsory assignment of FAC1502 for the first semester. In this question, students were required to identify the account to be debited and the account to be credited from a transaction. They also had to indicate the effect of the transaction on the accounting equation (assets = equity – liabilities). Students therefore had to classify the accounts identified as either assets

or equity or liabilities. Since conceptual knowledge deals with classifications, categories and principles (Anderson & Krathwohl, 2001:27). The researcher decided to include this question in the conceptual knowledge domain. In order to indicate the effect of the transaction on the accounting equation, students had to apply the rules of the accounting equation. This question was therefore classified under apply.

6. The tenant of Crazee Dealers paid his rent for March and April 20.8 on 28 February 20.8. The monthly rental amount is R7 500 per month. The financial year-end for Crazee Dealers is 28 February. What effect will the year-end closing transfer of the above transaction have on the accounting equation?

	Account debit	Account credit	A =	E +	L
(1)	Rent income	Income received in advance	0	-R15 000	+R15 000
(2)	Income received in advance	Rent income	+R15 000	0	+R15 000
(3)	Rent income	Income received in advance	+R15 000	+R15 000	0
(4)	Income received in advance	Rent income	0	+R15 000	+R15 000
(5)	Rent income	Income received in advance	+R15 000	0	+R15 000

Figure 4.7: Example of a compulsory assignment question for FAC1502

Source: Tutorial letter 101 of FAC1502

4.3.1.3 FAC1601 – study guide, past papers and assignments

The content of the FAC1601 module builds on the foundation laid by the content taught in the FAC1502 module. The focus of this module is primarily on application of various accounting theories, methods and techniques. As indicated in Table 4.6, the content covered includes various business forms, for example sole proprietorship (LU2), partnership (LU3 to LU5), close corporations (LU6), companies (LU7) and branches (LU8). Only sole proprietorships as business form is included in the FAC1502 module (LU15) (see Table 4.1).

Table 4.6: FAC1601 learning units

Learning unit (Unisa, 2018a)	Examples of verbs
LU 1: Introduction to the preparation of financial statements	Define, describe, discuss, explain, list
LU 2: Financial statements of a sole proprietorship	Prepare, record
LU 3: Establishment and financial statements of a partnership	Define, discuss, explain, prepare, record
LU 4: Change in the ownership structure of partnership	Calculate, describe, mention, prepare, record
LU 5: The liquidation of a partnership	Apply, describe, distinguish
LU 6: Close corporations	Discuss, prepare
LU 7: Introduction to companies	Calculate, distinguish, explain, prepare, record
LU 8: Branches	Discuss, explain, identify, record
LU 9: Statement of cash flows	Discuss, explain, prepare

Source: Author's own compilation

Figure 4.8 demonstrates that students are required to gain factual knowledge, gain an understanding of the underlying principles of each business form, and apply the principles when compiling financial statements. FAC1601 students are also required to analyse information in order, for example, to identify shortages in inventory levels (LU8). It is evident from Figure 4.8 that, similar to FAC1502, the focus in FAC1601 lies with the three lower levels of Bloom's taxonomy and therefore thinking skills related to each of these levels.

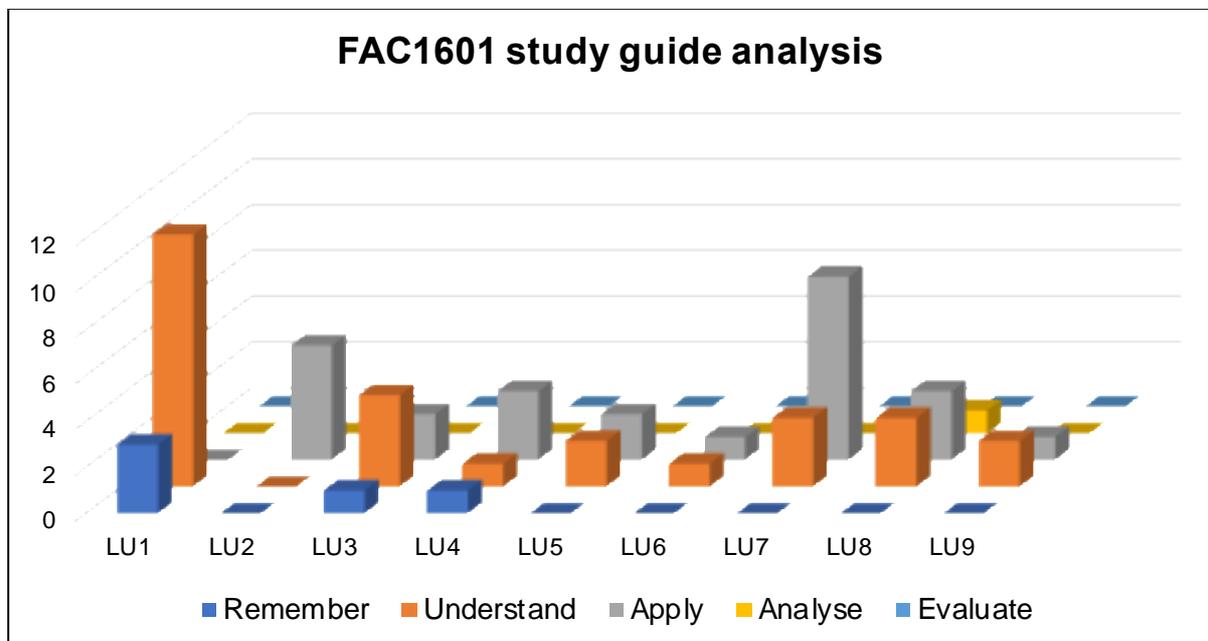


Figure 4.8: FAC1601 study guide objectives

Source: Author's own compilation

Similar to those of the FAC1502 study guide, the objectives of the FAC1601 study guide could be categorised as factual, conceptual and procedural knowledge (see Tables 4.2 and 4.7). An objective such as “list the specific purposes of the conceptual framework regarding the preparation and presentation of financial statements” was categorised under remember and as factual knowledge (Anderson & Krathwohl, 2001:27) since students are required to recall information. The objective “discuss the elements of financial statements as explained in the conceptual framework and indicate which elements pertain to the statement of financial position and which to the statement of profit or loss and other comprehensive income” pertains to an understanding of financial accounting concepts and was therefore classified as understanding under conceptual knowledge (Anderson & Krathwohl, 2001:27). An example of an objective that was classified under procedural knowledge (Anderson & Krathwohl, 2001:27) is “apply the accounting procedure in the case of a simultaneous liquidation of a partnership with a profit or loss on liquidation”.

Table 4.7: FAC1601 study guide objectives

Knowledge dimension	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual knowledge	5	18				
Conceptual knowledge		7	3			
Procedural knowledge			22	1		
Metacognitive knowledge						

Source: Author's own compilation.

For FAC1601, five past examination papers were uploaded on *myUnisa* for students (see Table 4.8). The memorandums of these examination papers are not provided to students. The majority of the required sections in the past papers used verbs, such as calculate, prepare and record to indicate to students what was expected of them. The objectives of the past examination papers of FAC1601 (Figure 4.9) showed that students were required to apply the various principles and procedures taught in the study material. The majority of the objectives were classified as procedural knowledge (see Table 4.9), since students were required to perform accounting procedures, for example preparation of financial statements. This was in line with the content of the study guide (see Table 4.6) according to which students were required to study the recording and reporting of accounting information for a variety of business forms.

Table 4.8: FAC1601 past examination paper information

Past examination paper	Number of questions	Examples of verbs
October 2017	4	Calculate, prepare, record
May 2018 (Paper 1)	4	Calculate, prepare, record
May 2018 (Paper 2)	4	Calculate, prepare, record
October 2018	4	Prepare
May 2019	4	Calculate, prepare, record

Source: Author's own compilation

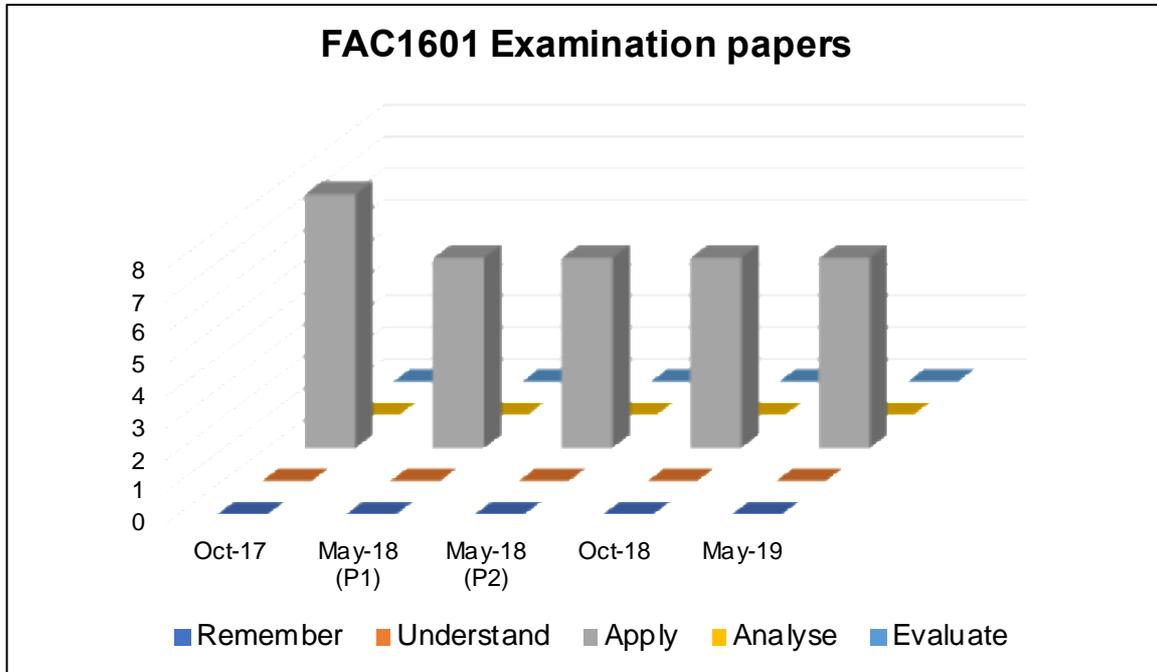


Figure 4.9: FAC1601 Examination objectives

Source: Author's own compilation

Table 4.9: FAC1601 past examination paper objectives

Knowledge dimension	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual knowledge						
Conceptual knowledge			6			
Procedural knowledge			25			
Metacognitive knowledge						

Source: Author's own compilation.

For FAC1601, students had to submit two compulsory assignments per semester. Each compulsory assignment consisted of ten MCQs. The focus of the FAC1601 compulsory assignments was the calculation of amounts to be disclosed in the financial statements of various types of business entities. Questions on how to record certain transactions were also included. Figure 4.10 demonstrates that the focus of these assignments was on application.

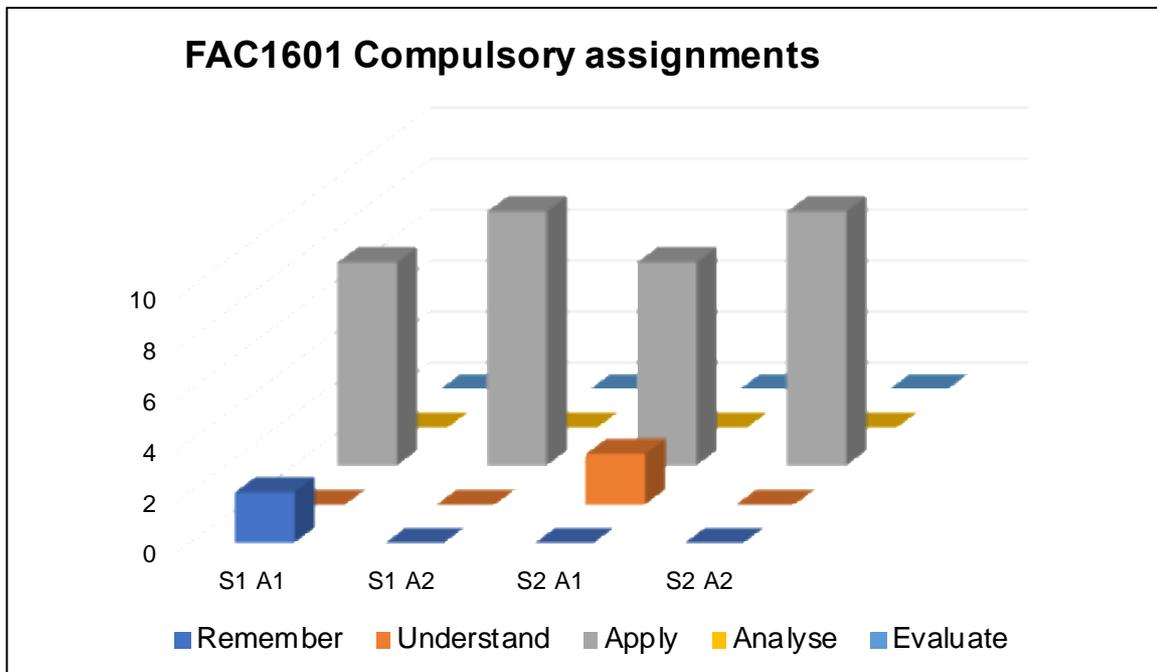


Figure 4.10: FAC1601 compulsory assignment objectives

Source: Author's own compilation.

The majority of MCQs required students to calculate various amounts to be disclosed in the financial statements. After providing students with a case study in the FAC1601 tutorial letter 101, the following question was, for example, provided:

Which one of the following alternatives represents the correct drawings balance for Panther as at 31 December 2018?

1. R45 000
2. R70 000
3. R76 000
4. R51 000

Students were required to apply their knowledge of relationships in the accounting equation to calculate the balance of the account, and therefore this question was categorised as application under conceptual knowledge.

Table 4.10: FAC1601 compulsory assignments

Knowledge dimension	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual knowledge	2	2				
Conceptual knowledge			28			
Procedural knowledge			8			
Metacognitive knowledge						

Source: Author's own compilation

Although the majority of the questions expected students to calculate amounts, Figure 4.11 provides an example of a question testing whether students knew how to record a certain transaction. This question therefore tested the application of financial accounting procedures and was therefore classified as application under procedural knowledge. As is evident from Table 4.11, these types of questions were in the minority. Similar to FAC1502, no objectives falling within the metacognitive knowledge domain were included in the study guide (see Tables 4.2 and 4.7) and subsequently it was also not included in the compulsory assignments.

QUESTION 1 – 3

On 1 January 2017, Baleka Ltd was registered with an authorised share capital of 250 000 ordinary shares and 100 000 10% preference shares. The incorporators of the company subscribed to 20% of the ordinary shares at R1,00 per share and paid in full.

On 30 April 2018, Baleka Ltd offered 40% of the authorised ordinary share capital and 15 000 preference shares to the public at R2,50 and R2,80 per share respectively. FCB Bank was appointed as the underwriter for the issue of shares at a commission of 1%. On 15 May 2018, the closing date for the applications, 125 000 ordinary and 15 000 preference shares were applied for by the public. On 31 May 2018, all of the shares offered to the public were allotted by the board of directors and the underwriter's account was settled in full.

During the board meeting on 31 December 2018, the directors declared an ordinary dividend of R0,20 per share. The dividends were paid on 2 January 2019.

QUESTION 1

Which of the following journals represent the correct journal entry for the receipt of all applications for ordinary shares issued to the public?

		R	R
1.	Bank Applications and allotment – ordinary shares	250 000	250 000
2.	Bank Application and allotment – ordinary shares	100 000	100 000
3.	Application and allotment – ordinary shares Bank	250 000	250 000
4.	Bank Application and allotments – ordinary shares	312 500	312 500

Figure 4.11: Example of a compulsory assignment question for FAC1601

Source: Tutorial letter 101 of FAC1601

It was clear from the analysis of the relevant study material that application is central in first-year financial accounting and therefore skills relating to application are central in first-year financial accounting. The relevant study material is however not the only interaction students have with the content. In the next section, the opinions of lecturers participating in this study regarding the development of critical thinking skills in the online learning environment are discussed. Please note that all responses from the participants are reproduced verbatim and unedited.

4.3.2 Interview findings

The scene for the interviews was set through posing the question to the participants on how they would define critical thinking. In general, participants expressed the view that critical thinking is the ability to do something more with information than just memorising the facts presented in the study material (P1, P2, P3, P7 & P8). Four of

the participants (P2, P3, P6 & P9) expressed the opinion that critical thinking within the context of first-year financial accounting is the ability to apply the concepts, procedures and rules that were learnt. Another participant (P6) thought that critical thinking entails the capability to criticise information through a process of evaluation and comparison that leads to the ability to apply the theory in the relevant scenario. Participant 4 mentioned that critical thinking means that students should be able to analyse information independently, whilst considering information from other sources as well. In the opinion of participant 9, it is also the ability to make connections between the information studied across multiple modules.

In section 4.3.2.1 below, the themes that emerged from the qualitative data analysis done in ATLAS.ti on the interview transcripts are discussed. The final codebook of the IC consisted of 108 codes from which 14 categories were formed. Figure 4.12 presents the main codes, categories and themes identified by the researcher from the IC reports.

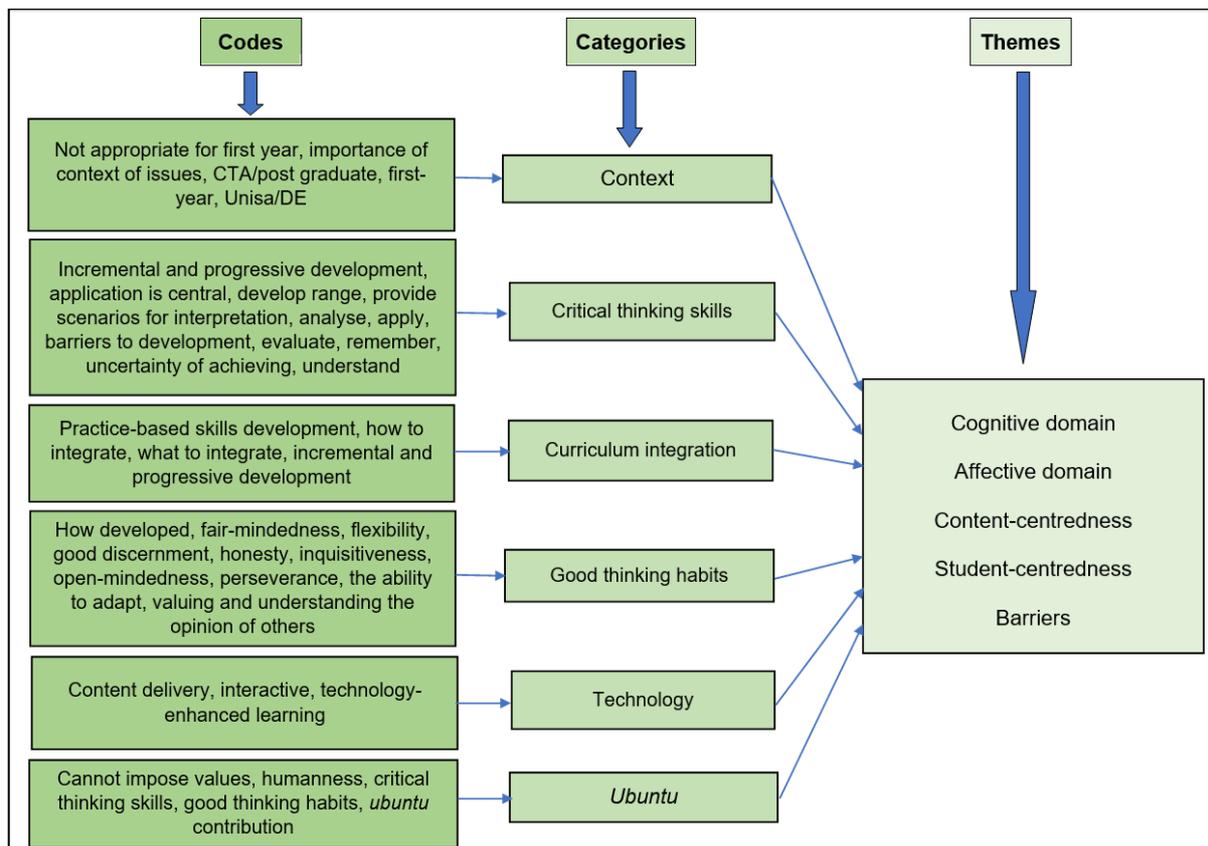


Figure 4.12: Codes, categories and themes

Source: Compiled from IC reports

The categories that were identified are context, critical thinking skills, good thinking habits, technology-enhanced learning, curriculum integration and *ubuntu*. From these categories, four themes were identified (see Figure 4.12).

4.3.2.1 Theme 1: Cognitive domain

Bloom's taxonomy pays attention to the cognitive domain (Anderson & Krathwohl, 2001:xxvii). This includes various critical thinking skills that can be linked to the different levels of Bloom's revised taxonomy (see Table 2.2). The participants in the study confirmed the importance of developing critical thinking skills at first-year level. Certain critical thinking skills have been included explicitly in the written curriculum (see section 4.3.1), whereas other skills are being developed as a result of how lecturers have set up the learning environment. In sections 4.3.2.1.1–4.3.2.1.3, the views of the participants regarding critical thinking skills as well as some concerns are discussed.

4.3.2.1.1 Critical thinking skills relating to remember, understand and apply

In order to ensure that participants were familiar with Bloom's revised taxonomy, the researcher provided a brief oral explanation of the taxonomy and the six hierarchical levels before commencing with the interview questions. Thereafter participants were asked –

- which thinking skills should be integrated into the first-year financial accounting modules relating to each level of Bloom's revised taxonomy; and
- how they would develop the skills identified.

The first three levels of Bloom's revised taxonomy are categorised as remember, understand and apply (see Figure 2.2).

As set out in Table 2.2, the ability to recall information and to recognise facts falls within the scope of the educational objective remember. One of the participants (P4) was of the opinion that first-year students need to memorise accounting terminology, whilst another (P2) felt that definitions should be memorised. Two participants (P2 & P3) agreed that formats of, for example, financial statements and reconciliations should be memorised. Furthermore, in questions based on scenarios, two participants

(P3 & P6) agreed that students need to be able to recognise the information relating to the required section in the scenario.

So only when they do something about that information, then we can say, yes, they've now remembered, and they've recognised ... (P6).

Two participants (P2 & P3) mentioned that first-year financial accounting students in general are good at memorising information. One participant (P4) mentioned that the study material is prepared to assist students to remember, whilst another participant (P6) felt that the study material could be improved through the addition of randomly compiled online self-assessments consisting of MCQs. Activities that require of students to remember are addressed in the written curriculum through objectives such as define, describe, list, mention, name and state (see Table 3.2).

Understanding of content could be demonstrated through the ability to interpret, provide examples, classify, summarise, infer, compare and explain (see Table 2.2). In the opinion of one participant (P6), the nature of financial accounting is the classification of financial information into categories. This means that, under the category understanding, classification is important (see Table 2.2). Three of the participants (P1, P3 & P6) agreed that first-year students should be able to interpret financial information before classifying it in terms of different categories. Two participants (P1 & P2) agreed that first-year accounting students should be able to classify financial information and added that the accounts affected in transactions should be classified assets, liabilities and equity. One of the participants (P1) further added that the ability to transfer knowledge from one scenario to a new scenario was important to demonstrate whether a student understands the content. One participant (P8) felt that a student could demonstrate understanding through explaining content in his or her own words, whereas another participant (P6) explained that understanding is demonstrated by providing examples from one's own experience. Five of the participants (P1, P3, P5, P6 & P7) were of the opinion that students demonstrate understanding through application-type scenarios. Two participants (P8 & P9) mentioned that respect and sharing – as reflected in *ubuntu* culture – would be important contributing factors towards the development of critical thinking skills, especially understanding. Five participants (P1, P3, P5, P6 & P7) were of the opinion that, within the field of financial accounting, understanding of the subject matter lays

the foundation for the other skills, since understanding is demonstrated through the student's ability to apply, whereas one participant (P8) stated that it is demonstrated through the ability to evaluate. Understand was addressed in the written curriculum through objectives such as describe, discuss, explain and distinguish (see Table 3.2).

Application entails implementation or execution of procedures (see section 2.6.2 and Table 2.2). The primary focus of first-year accounting in terms of skills lies at application as can be seen in the following statements:

[A]ll our questions are also application questions (P1).

[T]he best way of critical thinking is application at first level (P6).

At first-year level, it is important to teach students how to apply “especially the basic principles and concepts of accounting because then they won't have any problems further” (P2). One of the participants (P10) was of the opinion that students are taught how to think logically when preparing financial information, for example financial statements. This participant (P10) further explained that once students understand the logic and are able to follow it, they should be taught how to think analytically when presented with new information to enable them to use the information effectively when applying principles to arrive at the correct answer. Another participant (P4) explained that, after introducing the basic course content to students through various modes of delivery, lecturers provide students with scenarios to practice the application of financial accounting principles and procedures. In the opinion of one of the participants (P8), contextualisation is an important ability needed to enable students to apply the principles in financial accounting. One of the participants (P4) suggested that students should be encouraged to link what they learn from the study material to their daily lives. If students are able to apply the principles within their own settings, it demonstrates understanding and shows that they will be able to implement what they have learned in terms of any set of financial information (P8). Remember was addressed in the written curriculum through objectives such as calculate, prepare, record and show (see Table 3.2). Although the main focus in first-year financial accounting lies with application, first-year students are also developing skills relating to analyse, evaluate and create.

4.3.2.1.2 *Critical thinking skills relating to analyse, evaluate and create*

Knowing and understanding basic content knowledge, for example terminology, definitions and formats together with the ability to execute and implement (apply) procedures, form the foundation for students' ability to analyse (P4 & P6) and evaluate (P8). As discussed in section 4.3.2.1.1, the primary focus of first-year financial accounting is to provide students with a solid foundation. Seven participants (P1, P3, P4, P6, P7, P9 & P10) were however also of the opinion that skills relating to analysis and evaluation should be developed at first-year, albeit at a very basic level. Six participants (P1, P3, P5, P6, P8 & P9) expressed the opinion that the ability to create – in other words to synthesise – is a skill that should only be developed at a later stage.

Analysis is defined as the ability to break information down into subsections and the ability to understand the relationships between these subsections within the total structure (Krathwohl, 2002:215). Analysis entails differentiating between relevant and irrelevant information, making sense of how messages are organised, and determining the underlying purpose or meaning of a message (attribute) (Anderson & Krathwohl, 2001:80–82).

Regarding differentiating, participants felt that it is important to develop the skill on a first-year level. As discussed in section 4.3.1, differentiating between relevant and irrelevant information is included in the applicable study material at first-year level. Two participants echoed what the document analysis had revealed:

It is very important that the student should be able to identify what is relevant and what is not relevant (P4).

[A]nalyzing, but yes at basic level ... related to recognising and identifying the correct information (P6).

Regarding organising information, participants indicated that the students should be able to identify the characteristics of information and group them together as required. One participant felt that:

Analysis is more about comparison. [...] if we are able to group them together, our analysis, it's going to be much better (P3).

Another participant echoed this view:

Let's say, for example, [...] calculate the current ratio. The first thing we would ask ourselves: what goes under current assets? (P6).

One participant (P8) raised the concern that first-year students might only be memorising what goes into each category rather than critically think and analyse the information:

I would teach you to organise the information. What I'm now finding tricky is at a first-year level, do I need to explain to you why we organise it in this order? [...] Can I teach you to group so that you can recall it? Yes, I can definitely do that. [...] it's definitely a recall (P8).

Regarding attributing meaning, participants felt that students should know what the message is that certain accounting information conveys. Two participants elaborated by providing examples:

For example [...] how do you calculate gross profit percentage? What is that formula? How do you calculate it? What does it mean? Without having just knowing to calculate it, But the student must be able to know what it means (P4).

You know, let's say if you [...] say to them, you know why maybe the business didn't make a profit [...] for example and then they now have to know, how did that profit come about? (P9).

Evaluation requires the making of judgements based on standards or criteria (Krathwohl, 2002:215). This includes the ability to detect inconsistencies in processes and procedures, judging the appropriateness of applying certain methods (Anderson & Krathwohl, 2001:80–82) as well as formulating arguments (Facione, 1990:2–13).

I think evaluation rests on understanding (P8).

Focusing on the basic accounting concepts and procedures –

[Will enable these students to] reason, they're able to evaluate information and justify decisions when given transactions (P3).

Students should also be provided with feedback on all activities –

[In order to enable them to] understand and evaluate where they went wrong in order to address that for future questions (P7).

One of the participants (P2) was of the opinion that more attention should be given to evaluation skills and –

[F]irst-year students should be given the opportunity to start thinking and evaluating situations.

Although participants were confident that first-year accounting students should be able to develop critical thinking skills, some concerns were also raised.

Create requires actions such as generating, planning and producing (Krathwohl, 2002:215). Six participants (P1, P3, P5, P6, P8 & P9) stated that the level of create in Bloom's revised taxonomy (see Figure 2.2) is not currently addressed on first-year financial accounting. Only one of these participants (P9) was of the opinion that students should be challenged to think of creative solutions for problems and that consideration should be given to how aspects of creation can be included in the curriculum. Another participant (P4) also stated that there is a need to teach students how to be innovative (or creative). One participant (P7) stated that students should already start to develop the ability to plan, for example regarding how to approach a question, in their first year. On the other hand, one participant (P5) was of the opinion that the ability to create should only be developed from master's degree level onward, while another participant (P6) argued that it might be incorporated from the third year onward. The differing opinions of participants on, for example, the create level, indicate that there are still some uncertainties.

4.3.2.1.3 Critical thinking skills and the uncertainties regarding its development

Students are not always aware of the skills lecturers are trying to develop or want to assess when scenarios are provided to them from a different perspective. Elder and Paul (2010) mention that, for a person to move from being an unreflective thinker towards becoming a challenged thinker, he or she should be made aware of thought processes. In one of the first-year modules, the lecturers provided students with a scenario where a so-called inexperienced bookkeeper recorded transactions, and the

students were required to check his work and make the necessary corrections. The following regarding the above scenario was shared by Participant 2:

One student told us that he could not do the question because we put in too many ... mistakes in our question. [...] because we gave them a trade receivables control account with a lot of things on the wrong side and we told them to correct it [...] So, he said we made too many mistakes, we must re-think our paper because we don't know accounting [...] He couldn't do the question.

The participants also expressed some uncertainties that need to be addressed to integrate skills development successfully into the learning environments. One of the participants (P9) expressed the need for lecturers to start thinking about these skills and especially how it would be possible to assess these skills because if we cannot provide proof that these skills are developed it is “only a nice to have” that might be developed coincidentally. Furthermore, the concern was raised that lecturers do not really know the critical thinking skills abilities of students when they enrol for the first year. What was developed at school level (P1)? Although critical thinking skills could be developed in first-year financial accounting, one of the participants (P5) raised the point that students do not just study accounting, and that the development of these skills should really be balanced across all disciplines within a programme.

Although developing various critical thinking skills in first-year financial accounting students is important, it cannot be done in isolation without taking the affective domain into consideration (see section 2.6.3). The reasoning behind this is that one can develop cognitive skills but, in order to become a critical thinker, one should also possess the necessary motivation or habits (Facione, 2015:10; Halpern, 1998:452).

4.3.2.2 Theme 2: The co-existence of the affective domain and ubuntu

From the perspective of critical thinking, the affective domain comprises a combination of attitudes, intentions, values and beliefs (Facione, 2000:63). *Ubuntu* represents core values of humanness (see Figure 2.1) and can therefore co-exist or even influence the development of character traits through beliefs. Good thinking habits are character traits that one would expect from critical thinkers (Facione, 2000:63). It is therefore worth considering the good thinking habits that should be developed in first-year financial accounting students. Participants expressed concerns regarding imposing

values on students (4.3.2.2.1) but confirmed that the eleven good thinking habits – as set out in the conceptual framework (see section 2.7) – should all be developed in the first year. Only those that were identified by at least four participants are discussed here, namely inquisitiveness, open-mindedness, the ability to adapt, perseverance and honesty (see Table 4.11).

Table 4.11: Analysis of good thinking habits that should be included at first-year level

	Caution	Fair-mindedness	Flexibility	Good discernment	Honest reflection	Inquisitiveness	Meticulous accuracy	Open-mindedness	Perseverance	Ability to adapt	Valuing and understanding the opinion of others
P1						x		x	x	x	x
P2	x	x	x	x	x	x		x	x	x	x
P3						x		x		x	
P4		x									
P5		x			x				x	x	
P6			x	x	x			x		x	x
P7						x					
P8			x		x	x	x	x	x	x	
P9						x					
P10											
Total	1	3	3	2	4	6	1	5	4	6	3

Source: Author's own compilation

4.3.2.2.1 *Ubuntu values*

Ubuntu is an African philosophy, and forms an integral part of African culture. Participant 9 was of the opinion that since *ubuntu* has its origin in culture –

[One should] expose yourself to that culture. And in that culture [...] there's finances and money [...] there's opportunity [...] to apply accounting information.

Ubuntu is however not a financial system but a value system with principles that might extend to financial accounting and our online classrooms. Participant 1 raised the concern that one cannot impose a value system on people:

[Y]our value system is very closely related to what you believe or how you believe or if you even believe, but that will also guide you in what your values are and that will be what you then carry forward into an online [...] People can tell you and try to police you, but a value system is something that comes from within. So even though the university can say, "we accept this as our values" it is still something that every individual must make their own and they have a choice because they could or they could not.

Participant 8 however was of the opinion that *ubuntu* is not an African concept, but rather the name given in African philosophy to a human concept that “*cut across cultures, cut across religions*”. One of the participants (P9) defined *ubuntu* as the responsibility to show humanity to people. The fact that the principles of *ubuntu* are not foreign to other cultures and belief systems means that it is possible to find common ground that could be used successfully in online classrooms.

Underpinning everything is the same principles. It actually doesn't matter what religious grouping you come from, which culture you come from. [...] Underpinning all of it is humanness, and your ability to be a human being. So, what would I like to teach my students? How to be a human being (P8).

Since the attributes of *ubuntu* underpin humanness (Kamwangamalu, 1999:25–26; Letseka, 2016:5; Msila, 2008:70; Sambala et al., 2019:5), human beings can relate to the various aspects. This was evident in the views of participants where certain attributes of *ubuntu* were related to the development of good thinking habits.

4.3.2.2.2 *Good thinking habits*

“Students should adopt a questioning mind” was the view of Participant 3. This statement was one of the most profound answers received from a participant on the question “Which thinking habits should be developed in first-year financial accounting to enable students to become good critical thinkers?” One participant (P7) expressed concern that the students do not question the module content but accept it blindly. Two of the participants (P1 & P7) were of the opinion that academics should create a safe environment where students would be encouraged to ask questions. This is in line with the principles of Socratic questioning and Socratic dialogue as discussed in Chapter 2 (see section 2.6.4.2). Inquisitiveness allows one to “poke holes in information, why is this? ... Why does this work like this” (P8)? One participant (P1) mentioned that discussion forums could be used to encourage students to ask questions. Another participant (P3) shared that, through the practical implementation of *ubuntu* principles, a culture of caring should be instilled in the online collaboration environments, for example the discussion forums mentioned by Participant 1. This will allow students to feel safe to ask questions and result in an environment where opposing views could be shared.

In order for *ubuntu* to contribute to the development of critical thinking, the attributes of *ubuntu* culture should be present in our classrooms. Participant 8 remarked:

You can't get ubuntu right in a flash. So, to try and get it right online is to try and create that culture.

Participant 7 contemplated the change of the student profile at Unisa over the years and explained that there is a diversity of culture reflected in the students now enrolled for the modules. He stated that we should start by respecting all cultures and care for all cultures because they may have “different viewpoints”. Another participant explained –

[Y]ou would need to run the online platforms in such a way that you are facilitating a culture rather than the obsession with whether the answers are right or wrong (P8).

Social constructivism theory advocates that knowledge is constructed through reflection and social interaction where ideas are shared and tested during collaborative projects and discussions (Bates, 2015:54). It is during the times of social interaction that *ubuntu* contributes towards the development of critical thinking, especially understanding. The spirit of *ubuntu* contributes by creating a family atmosphere (Akinola & Uzodike, 2018:95) and therefore a safe haven where students could ask questions. Participant 3 said:

[Y]ou won't know everything; you are human being. You know some, some you won't know. Other things other people understand better. Maybe you are not the only one not understanding but when you ask questions, it clarifies for everyone. And normally when a student asks a question, we show everyone, it's not like I respond because you [...] in a class situation, this is the question, this is the response so everyone knows. Even that one who's scared to come forward, they are comfortable, at least I know that.

Participant 10 mentioned:

[Y]ou could argue that platforms like the online platform, there are rules in terms of how students should be engaging with themselves. Respect, waiting, waiting for a turn, not being disruptive, allowing other students to ask questions.

Respect was mentioned as an important contributing factor whilst fostering good thinking habits by three participants (P1, P3 & P6). Two participants (P1 & P6) emphasised the importance of respect in relation to the good thinking habit of valuing and understanding the opinion of others. One of the participants (P3) argued that caring and respect contribute to stimulate inquisitiveness because students will feel free to ask questions in order to get clarity.

Inquisitiveness, 'cause now a person who cares when you ask a question and the person is accepting the question regardless of whether I personally believe maybe that question is off or what but I am taking my time, I'm saying okay let me respond to you. [...] If we respect each other, everyone it's so easy for everyone to ... to gel in or whatever issues we are facing when we don't understand a specific concept, the fact that there is someone that cares. You are free to ask (P3).

One participant (P10) captured the essence of the contribution of *ubuntu* with the following statement:

If you [...] create an environment, then where everyone is respected, everyone's given the chance to ask questions, then everyone has a best chance of them being able to take from presented lecture and [...] develop certain habits, certain skills which at the end of the day then contribute towards someone who's able to think critically. Because they have had an opportunity to be trained, to be taught, and also to apply themselves in that environment.

Inquisitiveness and open-mindedness go together and should be stimulated at first-year level (P1). Open-mindedness is the ability to take cognisance of opposing views (Facione, 1990:13). In the teaching and learning environment, students are confronted with new situations and therefore it is important to “be open to what’s out there and then to use that to reassess your understanding of information” (P8). Inquisitiveness requires exploring; open-mindedness requires giving thought to what one finds, leading to the choice to change, which requires the ability to adapt one’s thinking.

Every time students are confronted with a new scenario, they need the ability to adapt their knowledge to fit the scenario (P1). As discussed in section 1.2.2, financial accounting students should be prepared to operate in the midst of a rapidly changing, technologically advanced knowledge society (Boyce, 2014:549; Cunningham, 2014:410; Chartered Accountants Worldwide, 2017:7; SAICA, 2017:31–33). Due to changes made in financial accounting standards, academics are regularly updating study material leading to students being confronted with regular changes in their knowledge base (P6). Participant 8 was of the opinion that the ability to adapt is a forced skill:

The way our universities are structured, they don't correlate with how our society operates. So, as soon as you walk into varsity, you are contradicting the life that you live outside of these walls. And the only way you're going to get through it is if you adapt, you don't have a choice.

In these situations where one needs to adapt, honesty in facing one’s own biases, prejudices and stereotypes come into play (Facione 1990:30). Participant 9 stated:

[S]ometimes I feel sorry for distance learning students. You know, they encounter this concept that you're seeing for the first time in, you know, it's up to you to work them out yourself. And sometimes you can get up to third year and realise the whole time you understood something completely wrong.

This emphasises the need for honest evaluation of knowledge and thought processes. Students should be enabled to address and correct their thinking sooner rather than later. One manner in which students are assisted in this regard is when “the students confront us and saying, ‘I’m struggling with this’” (P5).

Perseverance – or in Facione’s (1990:13) words “persistence though difficulties are encountered” – is needed in times when students struggle. Participant 8 described perseverance as a “huge one”. The reason for perseverance being so important is:

[P]erseverance is going, I’m wrong, but I’ve got to get up and keep going, which is the nature of business. So, if you’re not going to learn perseverance, you’re not going to get through this, the grief, for starters, because there’s a lot of knocking down that here. And even in the assessment methods [...] If you get it wrong, it comes back and you get it wrong and keeps coming back. So, your ability to get up and do it again and again and again till you get it right (P8).

The role of lecturers becomes important in assisting first-year students to persevere. First-year lecturers should support students through setting goals, timely feedback and motivation to “keep on going and inspire them to carry on” (P2). The teaching approach followed by a lecturer should therefore also be considered.

4.3.2.3 Theme 3: Teaching approach

In section 2.6.4.2, the role of technology was discussed together with various teaching approaches that could assist with the development of critical thinking skills. A discussion of the various views of the participants in this study follows below.

4.3.2.3.1 Curriculum integration through a content-centred approach

Financial accounting lecturers in general have been focusing on teaching students high levels of technical knowledge but not also the development of skills and habits (SAICA, 2017). Over the span of many years, technology has played an important role in delivering content to students (Bates, 2015:90). Transmitting information remains

the most commonly found teaching methodology, utilising the printing press, radio, television and the internet (Bates, 2015:90). Content delivered through printed material was analysed, and was discussed in section 4.3.1. In this section, attention will therefore only be given to the online delivery of content.

On the question of how technology is assisting students in developing critical thinking skills, it became evident from the responses that the participants were comfortable with using technology to deliver content to students. Three participants (P2, P4 & P9) all indicated that the use of video conferences – especially when recorded to allow students to watch as often as needed – would assist students with remembering content. One participant (P1) viewed the use of images as a contributing factor to improve memory. Participant 9 agreed that images can be used to improve memory, especially when combined with humour. Participant 4 suggested the use of music in our teaching, stating:

[[It's easier to remember lyrics in a song, than when it's just, when your read. So, as you listen to this song and then you, you remember it, yes.

In the opinion of the seven of the participants (P2, P3, P4, P5, P6, P9 & P10), video conferencing and the subsequent recordings of sessions comprise the main technology contributing towards students gaining an understanding of content. Participant 9 said, “if the lecturer is there explaining things to students, that helps you understand”.

In terms of application, two of the participants (P2 & P10) expressed the view that students would be able to apply the principles they had been taught, if the application was demonstrated through online video conferencing classes. Participant 10 said that students would learn how to apply the principles if the lecturer demonstrates the application while working through relevant questions.

Five of the participants (P1, P3, P4, P5 & P6) suggested that technology should be used to provide students with more practice questions that would improve their ability to apply accounting principles. Two of the participants (P8 & P9) suggested the use of applications where students could be provided with multiple source documents and had to follow the accounting process to deliver various journals or financial statements similar to what one would see in practice through software, for example Pastel.

Participant 6 stated that part of the responsibility of lecturers is to encourage students to practice regularly by completing questions from past examinations papers. Although students could complete these questions on their own, Participant 8 was of the opinion that the class environment, for example the FASSET¹⁰ classes should be used to allow students to work in groups. Therefore, in typical social-constructivist fashion, “[l]et’s learn from each other” (P8). This suggests that a student-centred approach should also be considered.

4.3.2.3.2 *Curriculum integration through a student-centred approach*

Discussion forums provide one of the tools that could be used in the online environment for collaboration (Liburd & Christensen, 2013:100–101). Participant 1 was of the opinion that students do not use discussion forums because they do not have access or that reading e-mails and completing other tasks are higher on the priority list. Participant 6 said that the reason for discussion forums not currently being used effectively was the large student numbers on the online platforms. She suggested

[E]-tutors should be utilised for this] because they have a smaller group [...] People are free to just express what they are saying and it’s not something massive and uncontrollable.

One of the participants (P4) was of the opinion that, if implemented correctly, discussion forums could be used to develop skills relating to understanding and evaluation. Interacting with students would be key. Participant 4 suggested:

[M]aybe you post the scenario. Or, yah you post the scenario on [...] a discussion forum, open up the discussion and then students put what they suggest, what they think the answer would be and so forth. Post questions. Just open up the ... the discussion to ... to students. Give them a topic to discuss and then see how they engage to the topic.

In the opinion of Participant 9, discussion forums play an important role in developing good thinking habits. This is done through lecturers actively engaging with students

¹⁰ FASSET classes refer to the face to face or virtual lectures presented to students who were granted a FASSET bursary (Unisa, 2020a).

encouraging them to acquire certain good habits, for example reading and exposing themselves to financial information.

So that's why interaction with the students [...] when they consult through our questions on myUnisa, on the discussion forums, in those examples, talk about Eskom or whatever we should have. But, we should have it also, though, we must be careful [...] not pushing an agenda. That you know, we, we're trying to talk about current issues [...] and it will only come like that if we start having us as lectures, that habit of [...], you know, think about current issues all the time. So, when we speak to the students it will come naturally, when we give classes or when it comes naturally (P9).

Two of the participants (P5 & P10) suggested the use of an online chat function together with live video classes.

Its objective is to make students understand. In case they don't understand we've got [...] the side questions [on the online chat function] (P5).

Participant 10 explained that, while one lecturer is presenting the class, another lecturer could engage with the students in the chat function, answering all the questions. Although some collaboration is taking place, it is evident that the participants are still following a teacher-centred approach rather than a student-centred approach. Another approach suggested by the participants was the use of real-life scenarios for students to practice application.

4.3.2.3.3 Curriculum integration through practice-based skills development using real-life scenarios

“Accounting needs practice” was the view of Participant 6. This view reflects the general feedback from the interviews on how skills should be developed in financial accounting modules. Accounting graduates need to develop skills that could be applied in various contexts and circumstances (Chartered Accountants Worldwide, 2017:5). Participant 8 mentioned that skills in financial accounting are developed through “practical implementation of the work” and added, “contextualising for me is a huge thing. If you don't contextualise, you're not gonna understand anything.” This confirms the importance of application and context within the field of financial accounting.

In line with the thinking of Ten Dam and Volman (2004: 370), participants confirmed the importance of using real-life examples and relevant contexts for the development of critical thinking skills. Participant 10 was of the opinion that real-life examples should be given to students after presenting online classes to allow them “to attempt the example” without providing them with the solutions beforehand. Participant 4 stated that, for accounting where you need to be “able to practically apply what you have learned, we need to provide students with different scenarios than what you have discussed”. Two of the participants (P4 & P9) were of the opinion that the scenarios used within the course content should be based on the daily experiences of students and therefore types of businesses and activities to which they are exposed. One of the participants (P5) shared that these scenarios are used in a manner that progressively increase in difficulty. This point of view relates to the fact that critical thinking develops slowly over time (Cunningham, 2014:411; Dwyer et al., 2014:48; Saavedra & Opfer, 2012:10; Wolcott et al., 2002:86; Young & Warren, 2011:861).

4.3.2.3.4 Curriculum integration: Progressive and incremental development of thinking skills

As mentioned in Chapter 2 (see section 2.6.1), the stage theory of critical thinking development indicates that critical thinking skills are developed progressively in six stages (Elder & Paul, 2010:1). Nine of the participants (P1, P2, P3, P4, P5, P6, P8, P9 & P10) indicated that thinking skills should be developed progressively together with content that increases incrementally in difficulty.

Before focusing on thinking skills, students must have a “strong background of accounting, and they need to know how to link information” (P3). This is done by teaching students definitions (P2) and formats (P2 & P3) before showing them how these fit into the accounting cycle. One participant (P2) explained regarding content that the first part of the study guide explains the basic accounting equation to students, starting with the broader categories – assets, liabilities and equity – before moving on to include income and expenses. This is then followed by explanations of how each transaction should be accounted for:

[T]he plusses and minuses, and equity and liabilities [...] move over to ledger accounts and see what side things are debited and what usually have debit

balances and what credit and then move to [...] your statements and just show how it's incorporated in your statements and then move to adjustments [...] and journal entries [...] the final statements [...] (P2).

However, content is not taught to students in isolation but rather in a symbiotic relationship with thinking skills. One of the participants (P2) explained that the starting point is content requiring memorisation before moving on to content that should be understood followed by content focused on analysis. The content and thinking skills should progress in such a manner that it provides the “building blocks” (P1) for content and skills to follow. The skills are interlinked and build on one another:

'Cause for them to be able to apply, can they absorb information first, can they interpret that knowledge so that they can be able to apply. For example, what we do [...] when we assess, we are mainly focusing on the application side of things. But for them to do that, it means can they interpret information independently on their own and come to apply (P3).

Financial accounting is a very practical subject, using practical questions as part of teaching and learning (P4 & P5). These questions “start from basics” from where it gradually “becomes more complex” (P5). Three participants (P 5, P9 & P10) shared that lecturers will use live online classes or the face-to-face FASSET classes to work through these questions with students. Participant 3 explained that, if one combines the content whilst demonstrating the thought processes to students –

Then they're able to reason, they're able to evaluate information and justify and decide which side to post this transaction. But when you miss that, we always get funny things and people cannot justify where you put it – on the debit side or on the credit side.

One of the participants (P5) shared that once the content was delivered and the thought processes demonstrated, students should practice with questions that gradually increase in difficulty and complexity until they are able to complete questions from past examination papers. These thought processes are important when considering the stage theory of critical thinking (Elder & Paul, 2010:1). As explained by Elder and Paul (Elder & Paul, 2010:1), the difference between the first stage (unreflective thinker) and the beginning thinker (second stage) lies in an awareness of thought processes. Although participants reported making use of a variety of

approaches within the financial accounting learning environment, some still felt that there are barriers preventing them from developing critical thinking through the financial accounting curriculum.

4.3.2.4 Theme 4: Barriers

“You can bring the horse to the water” (P1), but students are not participating in online activities, according to two of the participants (P1 & P2). The frustration was evident in Participant 2’s statement, “I mean how much must we do to [...] if students don’t want to communicate.” Participant 9 stated that it is easy to incorporate technology in teaching activities but then asked the question, “[h]ow many students would have that? You know, affordance.”

The lack of access to technology (see section 2.3.1) was mentioned by two participants (P1 & P9) as one of the major barriers that could hamper participation in online teaching environments. Participant 1 added that the unwillingness to participate using certain technologies was also identified as a barrier. In terms of collaboration activities, with specific reference to discussion forum activities, one of the participants (P1) mentioned that students will most likely concentrate on activities that they deem to be important; therefore, implying that time constraints may also be a contributing factor regarding lack of participation. In order to improve participation, Participant 1 contemplated the use of a reward system (in the form of extra marks) but was unsure whether students would participate in such a way that this would mean that value was actually added and not just to obtain the additional marks.

The large student numbers on FAC1502 and FAC1601 are perceived as a barrier for the implementation of a graded discussion forum type assignment. Implementing a grading system in the first-year financial accounting modules for participation in, for example, discussion forum activities might also be problematic (P6). When questioned about whether technology could assist with the development of evaluation skills, Participant 3 was leaning towards the use of MCQs for this purpose, because lecturers do not currently use any case study type questions in assignments. The participant (P3) explained that the main reason for this is student numbers in excess of 9 000 per semester, making the grading of any longer questions or discussions near impossible. Participant 6 mentioned –

While for us, if you look at the discussion forums, you can spend hours just going through each and every one.

Lastly, it seems that accounting academics are not yet comfortable in utilising technology for teaching purposes in an online environment, especially when it comes to the development of skills and not just purely the transmission of content. One participant (P2) mentioned that they want to add more multi-media presentations but cannot currently do so because it was difficult to find people who have the time to assist. Another participant (P4) was unsure how technology could assist with the development of skills stating, “for first-year students, I don’t think [...] technology will come in handy”. Participant 10 said, “when we use the online platform, obviously, we don’t link it to a particular development of a skill”, but that they were focusing on explaining the content and demonstrating to students how to answer questions.

The analysis of the relevant module documents provided insight into what is currently done through the written curriculum of FAC1502 and FAC1601 (see section 4.3.1). Through the interviews, participants shared their views on what they were developing at the time of this research regarding skills but also shared what they think should be improved and added to these modules. The similarities and contradictions found between the literature review and the empirical study are discussed in Chapter 5 (see section 5.4).

4.4 CHAPTER SUMMARY

Chapter 4 provided an in-depth discussion of the findings of the empirical investigation. A general overview of participant information was given followed by a discussion of the findings from the analysis of the relevant study material. Lastly, various themes that emerged from the data collected by way of the interviews were discussed. Chapter 5 will provide a brief summary of the literature review, the empirical study, the synthesis of the findings and the conclusions drawn from the study. The dissertation will conclude with a discussion of the limitations of the study, recommendations relating to future development of critical thinking skills through first-year financial accounting curriculums, and recommendations regarding future research opportunities.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

Chapter 4 provided an in-depth discussion of the findings of the empirical investigation. Participant information was provided after which the findings of the analysis of the relevant study material and the emerging themes identified from the interviews were discussed. Chapter 5 provides a brief summary of the literature review and the empirical study, followed by a synthesis of the findings and the conclusions drawn from the study. In conclusion, the limitations of this study, recommendations relating to the future development of critical thinking skills through first-year financial accounting curriculums and recommendations regarding future research opportunities are provided.

5.2 SUMMARY OF LITERATURE REVIEW

The literature review that was presented in Chapter 2, firstly dealt with the development of critical thinking as a concept. Critical thinking skills have become increasingly important and are now perceived as vital to survive in the twenty-first century workplace (Wagner, 2014:14–38). Philosophers view critical thinking in terms of the so-called perfect critical thinker (Lai, 2011:5) and thus contribute towards our understanding of the qualities and characteristics of the perfect critical thinker. Psychologists define critical thinking in terms of cognitive and metacognitive skills (Hepner, 2015:77), and contribute towards our understanding of how to assist people to engage in these processes for problem-solving purposes.

Subsequently, the contextual considerations of this study were discussed. The ODL mode of delivery aims to remove barriers to education (see section 2.3.1). Within the Unisa context, barriers that are explicitly recognised to be removed are that of time, geographic, economic, social, educational and communicational nature (Unisa, 2018c:2). This also aligns with the United Nations 2030 global SDGs, namely inclusive and equitable education of high quality, including the promotion of opportunities for lifelong learning amongst all groups of people (UNESCO, 2015:7). The OECD

recognised the importance of critical thinking skills in its learning framework for the future where consideration was given to the United Nations 2030 global GSDs (OECD, 2018:3). On a local level, the SA government also recognised the importance of removing barriers, providing sustainable educational opportunities and developing skills required by employers (DHET, 2012:57–59; DHET, 2013:50–54; NPC, 2012:295, 316). Unisa as an ODeL institution is uniquely positioned to respond to both global and local calls in terms of the provision of quality education, which includes the development of, for example, critical thinking skills.

Ubuntu and the social constructivist learning theory were employed as the theoretical framework for the current study. *Ubuntu* represents the core values of humanness (see section 2.4.1) and, together with the principles of communalism, explain how African communities function. *Ubuntu* provides a moral framework from where the principles of the social constructivist learning theory could flourish in learning communities within the African context. Social constructivism acknowledges that learning takes place within social contexts where ideas are shared and reflected upon in order to construct new meaning (Anderson, 2010:38). When combining social constructivism with the principles of *ubuntu*, it leads to the creation of an environment where the opinions of other people are respected and where people feel free to share honestly and learn together.

Next, the critical thinking skills required by the accountancy profession were considered. A comparison of the cognitive skills identified by various researchers and professional bodies was provided in Table 2.1 followed by a brief consideration of the non-cognitive attributes deemed important. The skills identified in both the cognitive and affective domains were limited to what were deemed necessary for accountancy professionals and, as a result, the cognitive skills and non-cognitive attributes as documented in Table 2.1, does not provide a comprehensive framework from where one could identify skills and attributes to develop in first-year financial accounting students.

Lastly, the educational development of critical thinking skills as concept was discussed. Educational experts used ideas from both psychology and philosophy and consequently contributed various taxonomies for the setting and assessment of educational objectives, learning theories, for example social constructivism and active

learning strategies that could assist in the development of critical thinking skills. Various active learning strategies, including problem-based learning, concept mapping, simulations and case studies could be implemented to develop critical thinking skills. Socratic questioning – especially when leading to Socratic dialogue – could be used effectively when following an African philosophical approach toward the development of critical thinking skills (see section 2.6.4.2).

The various critical thinking skills and dispositions identified in the APA Delphi study (Facione, 1990) correspond to the various categories identified by Anderson and Krathwohl (2001) as indicated in Tables 2.2 and 2.3. It is therefore possible to review the objectives in module material in accordance with the taxonomy table created by Anderson and Krathwohl (2001) and gain an understanding of how critical thinking skills are currently developed.

The initial conceptual framework as discussed in section 2.7 was adapted as the researcher's perspective of how various elements related to each other changed during the study. Figure 5.1 presents the final conceptual framework.

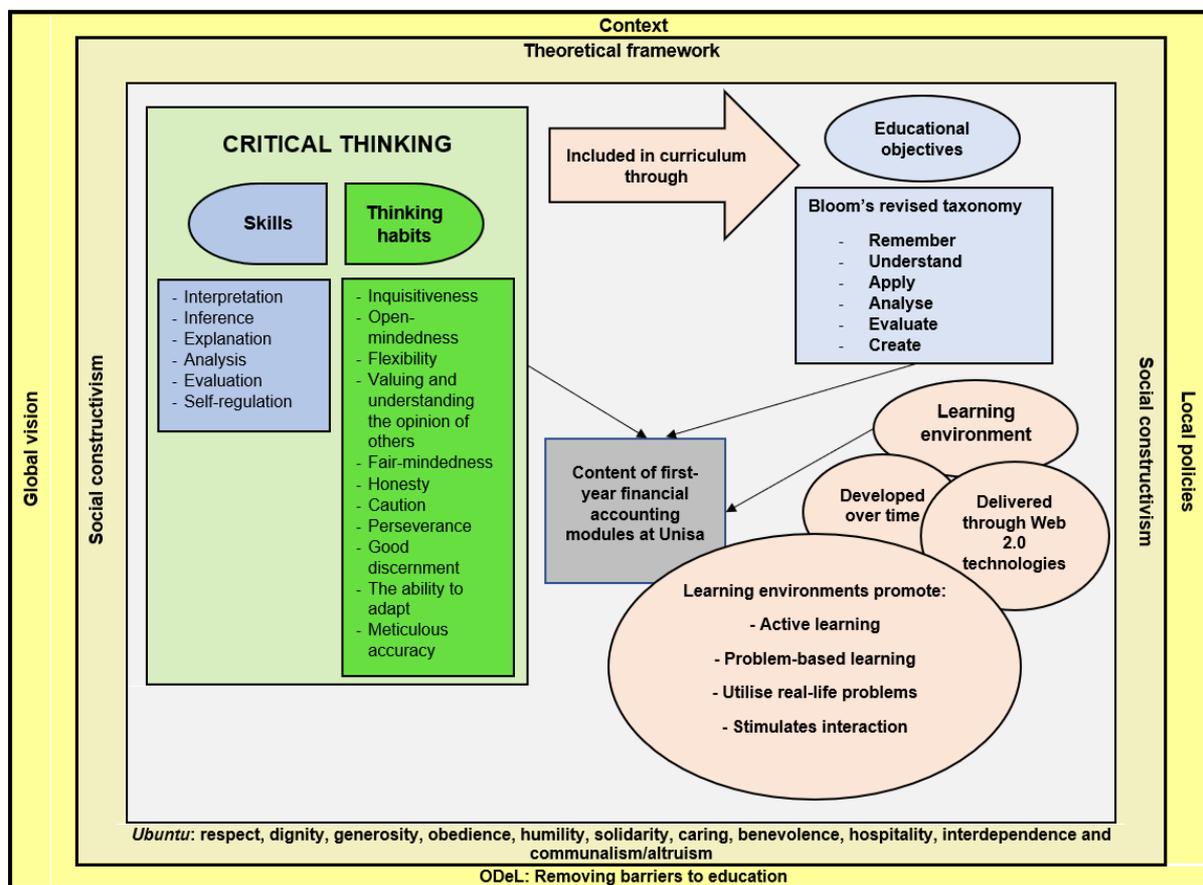


Figure 5.1: Final conceptual framework

Source: Author's own compilation

As depicted in Figure 5.1, the context of the study, namely ODeL, global visions and local policies provide boundaries within which decisions relating to the development of skills in curriculums should be made (see section 2.3). *Ubuntu* as moral framework and social constructivism as theoretical framework form a second layer of boundaries influencing decisions, although these are chosen within certain environments and not enforced (see section 2.4). In order to guide students to develop into critical thinkers, both critical thinking skills and good thinking habits should be developed through the curriculum. Bloom's revised taxonomy provides us with guidance on various levels of educational objectives that could assist with the setting of relevant goals for students. In our learning environments, we need to take cognisance of the fact that critical thinking develops slowly and over time. It is important to design appropriate learning activities that promote active learning, are problem-based or utilises real-life scenarios. Furthermore, within the ODeL environment, appropriate technologies

should be chosen to deliver the instruction in such a manner that the goals are achievable (see section 2.6).

5.3 SUMMARY OF EMPIRICAL STUDY

The case study was approached from a constructivist research paradigm. A qualitative approach was followed to conduct the empirical research for this study (see Chapter 3). Details were provided for the research design and methods chosen in the quest to answer the research questions (see sections 3.3 and 3.4). The requirements of the research aims and objectives are satisfied by explaining how the modules were chosen, how the participants were selected, the collection and representation of data, and how the data were analysed. Furthermore, justification is provided for the methods of gathering and analysing data, whilst focusing on obtaining answers for the research questions pertaining to the study (see section 3.4). Data were gathered through semi-structured, face-to-face interviews and analysis of module-specific documents (see section 3.4).

The trustworthiness based on Lincoln and Guba's (1985) criteria (credibility, dependability, transferability and confirmability) was discussed in section 3.5. The ethical consideration for the study was discussed in section 3.6 and presented in detail. Ethical clearance was obtained from the CEDU (see Annexure B). Permission to conduct research with the aim of gaining access to university documents from the learner management system (*myUnisa*) and the permission to interview Unisa lecturers was granted by the RPSC at Unisa (see Annexure C). The study was undertaken using the data gathered from module documents for FAC1502 and FAC1601 as well as from conducting interviews with 10 academics.

Document analysis was carried out on the module-specific documents obtained from the learner management system (*myUnisa*). The educational objectives from each selected document were analysed based on Bloom's revised taxonomy (Krathwohl, 2002:216). The finding from the content analysis was that the central focus of FAC1502 and FAC1601 lies with application, although the objectives remember and understanding were also addressed in order for students to be able to apply the accounting principles (see section 4.3).

As derived from the literature review, critical thinking is more than just achieving certain educational objectives in a written curriculum. Interviews were therefore conducted with academics in order to gain an understanding of the development of critical thinking skills in the online learning environment as well as the cultivation of good thinking habits. Through the interviews, the focus on skills relating to the application of financial accounting concepts and procedures at first-year level was confirmed. However, the participants added that students should be able to analyse information, especially the ability to differentiate between relevant and irrelevant information. The participants were also of the opinion that evaluation skills should be developed at a basic level in term of first-year financial accounting modules. All eleven good thinking habits as was set out in the conceptual framework (see section 2.7) were confirmed as habits that should be developed at first-year level with special attention given to inquisitiveness and open-mindedness, the ability to adapt, honesty and perseverance (see section 4.3.2.2.2). Skills within the financial accounting discipline are best developed through practice utilising real-life scenarios (see section 4.3.2.3.3). Furthermore, the participants were of the opinion that a process where skills are developed and content is taught should take place in a progressive and incremental manner (see section 4.3.2.3.4).

Participants were furthermore interviewed to obtain an understanding of the role technology plays in the development of critical thinking skills and good thinking habits. Technology is used for the delivery of content in various formats (see section 4.3.2.3.1). From the interviews, it was evident that, at the time of this research, content delivery through a teacher-centred approach was still mainly used in first-year financial accounting, but that the participants were also considering changing certain aspects within the module designs that could be considered more student-centred. Collaborative activities through discussion forums were encouraged, but participants viewed the large student numbers enrolled for the modules as one of the main barriers hindering a more student-centred approach (see section 4.3.2.3.2).

Lastly, participants were required to share their views on the role the African philosophy of *ubuntu* was playing at the time, or the role it should play in future in our learning environment with specific reference to the development of critical thinking skills and good thinking habits (see sections 4.3.2.1 and 4.3.2.2). Although participants

shared that respect as reflected in *ubuntu* could contribute towards developing critical thinking skills, the true value lies in the contribution towards the development of good thinking habits. Where the principles of *ubuntu* were being applied, participants were of the opinion that it fostered an environment of caring where students felt comfortable with sharing ideas and collaborating.

5.4 SYNTHESIS OF RESEARCH FINDINGS

From both the document analysis (see section 4.3.1) and the interviews (see section 4.3.2), it was evident that skills related to the application of financial accounting concepts and procedures are central in the first-year financial accounting curriculum. Evidence was found during the document analysis (see section 4.3.1) as well as during the interviews (see section 4.3.2) that the lower three levels of Bloom's taxonomy are addressed in the curriculum. In line with Young and Warren's (2011:866) findings, the interviews confirmed that the ability to transfer knowledge from one scenario to the next is an appropriate critical thinking skill to develop in first-year financial accounting students. It was also confirmed that first-year financial accounting students should be able to interpret financial information similar to the findings of Kealey et al. (2005:35, 45) and those of Baril et al. (1998:392). An aspect relating to Bloom's level of understanding that was not discussed in the literature review, but deemed important by many participants was that understanding lays the foundation for the application of concepts and procedures in financial accounting. During the literature review, it was found that analysis and evaluation-related skills are also of importance for first-year financial accounting students (Kealey et al., 2005:35, 45). Although very limited, the document analysis indicated that aspects relating to analysis and evaluation are included in the curriculum (see Tables 4.2, 4.4 and 4.7). During the interviews, participants elaborated on this aspect by explaining that first-year students should be able to differentiate between relevant and irrelevant information, organise information, attribute meaning and evaluate information to justify decisions (see section 4.3.2.1.2).

The development of good thinking habits was not confirmed during the analysis of the documents. Information pertaining to good thinking habits was obtained through the interviews. Inquisitiveness (as suggested by Doney et al., 1993:300), honest reflection, perseverance, open-mindedness, the ability to adapt and valuing and understanding the opinions of others were the main good thinking habits identified

during the interviews as applicable to first-year financial accounting. Although the habits identified during the APA Delphi study were far more comprehensive, all of the habits identified in the interviews corresponded to habits in the APA Delphi study (Facione, 1990:13). Reflection was also identified by Kealey et al. (2005:35, 45) as a necessary skill in an introductory accounting module and is needed for students to move from the unreflective thinker stage towards the challenged thinker stage (Elder & Paul, 2010).

During the literature review, it was found that in order to develop critical thinking skills, instructors should create learning environments that stimulate dialogue (Doney et al., 1993:300). Socratic questioning leading to Socratic dialogue was suggested as a teaching approach that could be utilised to develop critical thinking (see section 2.6.4.2). Participants agreed that students should be encouraged to ask questions and be inquisitive (see section 4.3.2.2.2). However, it was found that, at the time of this study, the participants were more comfortable delivering content to students rather than stimulating dialogue (see section 4.3.2.3.1). The participants confirmed that discussion forums could be used for dialogue but shared their concerns that students were not interested in participating, and that the large student numbers enrolled for the modules made it difficult to manage (see section 4.3.2.3.2). One collaborative tool that was not identified during the literature review but which was mentioned during the interviews, was live video conferences that were combined with a chat function that allowed students to ask questions during the broadcast (see section 4.3.2.3.2). This tool was however not used in a collaborative manner, but rather for questions posed by students and answered by lecturers.

In the literature review, *ubuntu* was presented as a moral framework that could play a role in the development of critical thinking (see section 2.4.1). Dyson and Brice (2016:108) suggest that the values underpinning *ubuntu* could assist in creating an environment where students feel safe to participate in open discussions and reflection. This was confirmed during the interviews with specific reference to showing respect, which could result in a willingness to share opposing views (see section 4.3.2.2.2).

The literature review further suggested that real-life scenarios should be used for the development of critical thinking (Ten Dam & Volman, 2004:370). This was confirmed during the interviews where participants expressed the importance of contextualising

and using real-life scenarios (see section 4.3.2.3.3). Although the progressive teaching of content was not explored in the literature review and was not the focus of the interviews, participants explained that laying a foundation with content is the first step before even contemplating the development of critical thinking skills. This idea is in line with the view of the so-called 'specificists' regarding critical thinking (Davies, 2013:530). As was suggested in the literature (see section 2.6.4.1), it was confirmed during the interviews that thinking skills (similar to technical knowledge) should be built up from a basic level and gradually increase in complexity (see section 4.3.2.3.4).

Student-centred approaches, for example Socratic dialogue and using real-life scenarios, were identified as possible approaches that could be followed to develop critical thinking. Before deciding on an approach and the technology that could be used to achieve these set goals, one should also consider the barriers. Literature suggested that in an ODeL environment, the removal of various barriers should be considered (see section 2.3.1). Removing time barriers could, for example, be achieved through the implementation of asynchronous activities (see section 2.3.1). The suggestion of participants was to make use of discussion forums (see section 4.3.2.3.2) although solutions need to be explored for the effective use of technology on modules with student numbers in excess of 9 000. On the other hand, using synchronous video broadcasts with a chat function (as suggested during the interviews) could imply a time barrier for some students. Access to technology (see section 2.3.1) was identified as a possible barrier in the literature review, and participants confirmed that, at the time, this was a considerable barrier that had to be taken into consideration (see section 4.3.2.4).

In this section, the similarities and differences between the literature review and the research findings were highlighted. In the next section, the conclusions drawn from the research findings will be discussed as they pertained to each research question.

5.5 CONCLUSIONS

The aim of this study was to determine how critical thinking is developed in the first-year financial accounting curriculum at an SA ODeL institution. The main research question was supported by the following sub-questions:

- Which critical thinking skills should be developed in first-year financial accounting?
- How are critical thinking skills developed in the first-year financial accounting curriculum?
- Which thinking habits should be developed to enable first-year financial accounting students to become critical thinkers?
- How could the principles of the African philosophy of *ubuntu* be applied to assist with the development of critical thinking skills and good critical thinking habits?
- How is technology utilised to assist with the development of critical thinking skills and critical thinking habits?

5.5.1 Sub-question 1: Which critical thinking skills should be developed in first-year financial accounting?

During the research project, the researcher aimed to identify the skills from each of the levels of Bloom's revised taxonomy relating to critical thinking, which are relevant and which should be developed in first-year financial accounting students. It was concluded that there are skills from each level of Bloom's taxonomy that are relevant to first-year financial accounting students. Table 5.1 sets out the skills identified during the empirical research (see sections 4.3.1 and 4.3.2) and which are included as well as skills that participants identified that should be included.

Table 5.1: Critical thinking skill findings

Bloom's revised taxonomy level	Skills included at the time of this research	Skills that should be added
Remember	Recall and recognise (see sections 4.3.1 and 4.3.2)	
Understand	Explain (see section 4.3.1), classify, interpret information and knowledge transfer between different scenarios (see section 4.3.2)	
Apply	Execution of procedures (see section 4.3.1), logical thinking (see section 4.3.2)	
Analyse	Calculate ratios (see section 4.3.1), differentiate, organise, attribute meaning (see section 4.3.2)	
Evaluate	Reconcile (see section 4.3.1), justify decisions relating to transactions, check own work (see section 4.3.2). Understand most important cornerstone towards evaluation	Evaluating situations (see section 4.3.2)
Create		Innovative thinking and planning (see section 4.3.2)

Source: Author's own compilation

It was concluded that the predominant focus of both FAC1502 and FAC1601 is on application (see section 4.3.1). The modules are however set up in a scaffolded manner, starting with basic knowledge and skills that form the foundation for more complex knowledge and skills. Students are provided with information that should be memorised, for example definitions and formats (see section 4.3.1), before they can commence with activities that require understanding. This is then followed by scenarios where students are required to apply the knowledge they had acquired. Analysis takes place on a basic level where students, for example, need to differentiate between relevant and irrelevant information (see section 4.3.2.1.2). Although evaluation skills are included on a very basic level, it was identified as an area where improvement is needed by allowing students to evaluate different situations (see section 4.3.2.1.2). Skills relating to create were not explicitly developed in the first-year financial accounting curriculum at the time of this research. It was however identified that innovative thinking and planning skills are important to start developing from the first year onward. It was therefore concluded that an intervention is needed to incorporate more evaluation skills as well as to find ways to develop innovative thinking and planning skills within the first-year curriculum.

5.5.2 Sub-question 2: How are critical thinking skills developed in the first-year financial accounting curriculum?

Concerning the way critical thinking skills are developed, it was concluded that in both FAC1502 and FAC1601, a content-centred approach is followed although literature suggests that a student-centred approach is more suitable (see section 2.6.4.2). The skills identified as relevant during the empirical research are predominantly addressed through printed study material. Video conferences (used in a content-centred manner) were also used from time to time in order to assist with memorisation, understanding and application (see Table 5.2).

Table 5.2: Findings on how the skills are developed.

Bloom's revised taxonomy level	How was it developed at the time of this research
Remember	Printed study material (see sections 4.3.1 and 4.3.2), recorded video conferences enabling repetition (section 4.3.2)
Understand	Printed study material (see section 4.3.1), video conferences where lecturers explain content
Apply	Printed study material (see section 4.3.1), demonstration of application by lecturer during video conference, practice questions (see section 4.3.2)
Analyse	Printed study material (see section 4.3.1)
Evaluate	Printed study material (see section 4.3.1), feedback on assignments (see section 4.3.2)
Create	Not done

Source: Author's own compilation

In addition to what is already done, participants recognised that the development of critical thinking skills is important and suggested that randomly compiled online multiple-choice self-assessments be added to improve memory. In order to enhance skills related to understanding further, participants suggested that online discussion forums should be used for collaboration suggesting that social constructivism as learning theory could be applied. To improve the development of skills related to application further, participants suggested that students should be provided with more questions to practice. Group work on these practice questions was also suggested as a possibility to improve skills. It was therefore concluded that, although the curriculum was set up in a content-centred manner at the time of this research, it would be

possible to shift towards a more student-centred approach as suggested by literature (see section 2.6.4.2).

5.5.3 Sub-question 3: Which thinking habits should be developed to enable first-year financial accounting students to become critical thinkers?

Thinking habits were not pro-actively developed in the first-year financial accounting curriculum at the time of this research. It was concluded that these habits should be developed from the first year onward. The participants identified eleven habits that they deemed to be important to develop (see Table 4.11) in first-year financial accounting. It is important to develop these habits in order to truly assist our students to develop into good critical thinkers (Facione, 2015:10; Halpern, 1998:452). It became evident through the interviews that certain habits – for example inquisitiveness, open-mindedness and valuing and understanding the opinion of others – would best be developed in collaborative environments whilst applying social constructivist principles (see section 4.3.2.2.2). Since these skills were not being developed pro-actively at the time of this research, an intervention is needed to integrate these habits in an appropriate manner to form part of the financial accounting curriculum.

5.5.4 Sub-question 4: How are the principles of the African philosophy of *ubuntu* applied to assist with the development of critical thinking skills and good critical thinking habits?

The African philosophy of *ubuntu* provides a value system or so-called moral framework for human behaviour. It was found that the values of *ubuntu* are not uniquely African, but rather general human values that cut across cultures and religions. Although it was found that one cannot impose one's own values upon others, it was concluded that the general nature of *ubuntu* makes it possible to apply in collaborative environments (see section 4.3.2.2.1). It was confirmed during the interviews that certain principles of *ubuntu* could play a role in the development of critical thinking skills (see section 4.3.2.1.1). It is however in the management of social constructivist learning environments and the development of good thinking habits where *ubuntu* could really make a considerable contribution. It was concluded that the contribution of *ubuntu* towards the development of critical thinking is made as moral

framework guiding human behaviour, especially in relation to the development of good thinking habits.

5.5.5 Sub-question 5: How is technology utilised to assist with the development of critical thinking skills and critical thinking habits?

It was concluded that only technologies that the participants were confident and comfortable using in a content-centred manner were used in FAC1502 and FAC1601. The participants were however aware of the fact that collaborative activities were needed to develop critical thinking skills and good thinking habits. Participants shared that, if implemented correctly, discussion forums could assist in the development of critical thinking, but barriers were hindering them to do so (see sections 4.3.2.3.2 and 4.3.2.4). Some participants expressed that they were unsure how to use technology while others wanted to explore the use but lacked the necessary support (see section 4.3.2.4). It was therefore concluded that interventions were required to remove or overcome the barriers in order to use technology more effectively to enable instructors to facilitate the development of critical thinking skills and good thinking habits.

5.5.6 Main research question: How is critical thinking developed in the current first-year financial accounting curriculum at a South African ODeL institution?

The first pillar of critical thinking, namely critical thinking skills, is currently developed in a scaffolded manner starting with basic content knowledge and skills. In order to think critically within financial accountancy, basic content knowledge and understanding are required and were thus identified as pre-requisites before critical thinking skills could be developed. Currently, the curriculum is set up in a content-centred manner and is thus oriented towards knowledge transfer rather than towards skills development, which would require a student-centred approach. There are however attempts being made through video conferences to engage students more pro-actively.

The second pillar of critical thinking, namely good thinking habits is not currently pro-actively developed in first-year financial accounting (see section 5.4). However, the importance of incorporating these habits into the curriculum was confirmed in this study. It was further confirmed that the African philosophy of *ubuntu* could play a role

as moral framework whilst embarking on the journey to develop good thinking habits. This will be possible through careful planning and incorporation of collaborative learning activities delivered through interactive technologies (Web 2.0). It was therefore concluded that, although some effort has been made to develop critical thinking in first-year financial accounting students, an intervention is needed to improve the current teaching approaches and to include activities aimed at developing not only skills but also good thinking habits.

5.6 LIMITATIONS

This study was only concerned with the evaluation of the written and implemented curriculum of first-year financial accounting modules (FAC1502 and FAC1601), which form part of the training of future CAs at an SA ODeL institution. Other first-year accounting courses (at residential universities and those not forming part of CA training) were excluded from the study. Although the researcher recognised the fact that contributions by both the instructor and student within a social constructivist paradigm could influence the implemented curriculum, this study only focused on the perceptions of the instructors involved in teaching the applicable courses. Since the literature suggests that the measurement of the improvement of critical thinking skills is difficult, especially since critical thinking skills develops very slowly over a long time, this study did not attempt to measure the critical thinking skills (see section 2.6.4.1). This study focused on gathering information pertaining to the development of critical thinking skills through the application of social constructivist principles interpreted through African philosophy at an ODeL institution in South Africa. The results and conclusions of this study will only be applicable within the context of this study and cannot be generalised across all financial accounting courses. However, this study could be used as an example for similar research to be conducted in other subjects, on other financial accounting levels or in different contexts.

5.7 RECOMMENDATIONS

Based on the findings from the literature review, the interviews and document analysis, recommendations related to the development of critical thinking are made. Recommendations are made on a module level and at departmental level.

5.7.1 On module level

The lecturers are closely involved in the module content and facilitate the interaction of students with the content. Since the findings indicated that first-year financial accounting modules are still pre-dominantly presented in a content-centred manner, it is recommended that lecturers reconsider their teaching approach. A student-centred approach where students are guided through Socratic questioning is suggested as a possible alternative to the current approach (see section 2.6.4.2). Furthermore, lecturers can only assist students with developing skills and habits that are known and defined. At the time of the research, no objectives falling under the metacognitive knowledge domain were included in the first-year financial accounting modules (see section 4.1). The first step towards becoming a good critical thinker is an awareness of thought processes (Elder & Paul, 2010). It is therefore recommended that the critical thinking skills and thinking habits that should be developed, should be defined and the teaching approach most suitable to reach the objectives should be chosen. These objectives should also be communicated to the students enrolled for the modules. The research findings identified that one reason for technology not being effectively utilised in the modules is a lack of support. It is recommended that all lecturers involved in the modules be granted the opportunity to receive training on the use of technology, including various teaching methods involving the use of technology. The lecturers should however also take responsibility to improve the learning environment by identifying the areas where support is needed and communicating it to the management of the department.

5.7.2 At departmental level

Critical thinking skills develop slowly over a long time (see section 2.6.4.1). It is therefore necessary to map the development of these skills as they relate to financial accounting across all modules (first year to third year) in order to ensure that students reach the exit-level competencies as set out in the SAICA competency framework

(SAICA, 2017:42–43). This would also entail mapping the progressive development of skills that should be developed from first year onward from a basic level and determining how the level of expected competence should be increased in following years. It was found that lecturers lacked support relating to the implementation of technology. It is recommended that the management of the department assist in identifying the support needed and to provide the support that is possible on a departmental level, for example training interventions. Participants identified barriers, for example large student numbers for modules and access to technology. It is recommended that an online community of practice be created for the department where lecturers from all financial accounting modules can discuss the barriers with the aim of identifying innovative solutions to overcome barriers.

5.8 SUGGESTIONS FOR FURTHER RESEARCH

The study revealed findings that can contribute towards the available academic literature regarding the development of critical thinking within the field of accountancy. In this study, various critical thinking skills and good thinking habits were identified as relevant to first-year financial accounting curriculum. It was highlighted that financial accounting at an ODeL institution is still concentrating on teaching high levels of technical knowledge, but has not yet explored the possibilities ODeL offers in order to develop skills and habits. Future research should explore different instructional designs for the financial accounting curriculum to determine how these skills and habits could be developed most effectively within various contexts. The Covid-19 pandemic emphasised the skills shortages within South Africa (Xaba, 2020), and further research is needed to determine the impact of the pandemic on skills development and how institutions of HE can address the development needs. Within the contextual boundaries of this study, it was clear that further research on innovative use of technology to facilitate the development of critical thinking skills and good thinking habits is required, whilst considering the aim of ODeL to remove barriers to education (Inamorato dos Santos et al., 2016:25). This study suggested *ubuntu* as moral framework for collaborative activities aiming to develop critical thinking. Further research on the implementation of *ubuntu* as moral framework and its effectiveness in contributing towards the success in collaborative environments is required.

5.9 CONCLUSION

The aim of this study was to explore how critical thinking is developed through the first-year financial accounting curriculum at an ODeL institution in South Africa. This chapter provided an overview of the literature review, the empirical study and the synthesis of the findings. The research questions were answered and recommendations were made based on the findings. Lastly, the limitations were discussed and the researcher's thoughts on possible future research were shared.

It is evident that critical thinking has become an important skill for graduates entering the workplace (see section 2.2). In order to become a good critical thinker, graduates need to develop both critical thinking skills and good thinking habits (Facione, 2015:10; Halpern, 1998:452). Through the interviews with the participants (see section 1.7.1) and the analysis of relevant study material, various critical thinking skills from each level of Bloom's revised taxonomy were identified as well as good thinking habits relevant to first-year financial accounting (see sections 5.5.1 and 5.5.3). It was identified that financial accounting at an ODeL institution is still pre-dominantly delivered in a content-centred manner whereas literature suggests that a student-centred approach is more suitable (see section 5.5.2). *Ubuntu* as moral framework (see section 2.4.1) and social constructivism (see section 2.4.2) were provided as theoretical lenses of the study and thus provided the point of view from where recommendations were made. In order to guide our students towards becoming good critical thinkers, "[l]et's learn from each other" (P8).

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ANNEXURE A

INTERVIEW GUIDE

1. Obtain participant consent form

2. Interview questions:

2.1 General information

The department of Financial Accounting offers various accounting modules, the majority forming part of the training of future chartered accountants.

- What is your highest academic qualification?
- Are you also qualified as a chartered accountant? (If answer is yes: When did you qualify as a chartered accountant?)
- How long have you been part of the academic staff in the department of Financial Accounting?
- What module are you currently teaching?
- How long have you been involved in the teaching of this module?

2.2 Defining critical thinking

The South African Institute of Chartered Accountants (SAICA) includes various professional skills and attributes in their competency framework that they expect newly qualified chartered accountants (CAs) to possess. Since the College of Accounting Sciences (CAS) is privileged to present a SAICA accredited program, it is expected that CAS not only provides students with high levels of technical knowledge, but also assists with the development of professional skills and attributes. Critical thinking skills is one of the professional skills included in the SAICA competency framework and therefore CAS should consider the development thereof in the degree programs.

- In order to develop critical thinking skills of students, it is important to understand what these skills are. How would you define critical thinking skills?

- What critical thinking skills are relevant to include in a first-year financial accounting course?

2.3 Critical thinking skills

Anderson and Krathwohl revised Bloom's taxonomy of educational objectives and the result was a taxonomy with six hierarchical levels of thinking skills, namely remember, understand, apply, analyse, evaluate and create. During the next part of the interview I am going to ask questions on each of these six levels.

(Provide with examples of sub-skills if required as per table 2.2)

Remember

- Which thinking skills should be integrated into first-year financial accounting courses to enable students to reach the educational objective of 'remember'?
- How could thinking skills enabling students to reach the educational objective 'remember' be developed in first-year financial accounting courses?

Understand

- Which thinking skills should be integrated into first-year financial accounting courses to enable students to reach the educational objective of 'understand'?
- How could thinking skills enabling students to reach the educational objective 'understand' be developed in first-year financial accounting courses?

Apply

- Which thinking skills should be integrated into first-year financial accounting courses to enable students to reach the educational objective of 'apply'?
- How could thinking skills enabling students to reach the educational objective 'apply' be developed in first-year financial accounting courses?

Analyse

- Which thinking skills should be integrated into first-year financial accounting courses to enable students to reach the educational objective of 'analyse'?
- How could thinking skills enabling students to reach the educational objective 'analyse' be developed in first-year financial accounting courses?

Evaluate

- Which thinking skills should be integrated into first-year financial accounting courses to enable students to reach the educational objective of 'evaluate'?
- How could thinking skills enabling students to reach the educational objective 'evaluate' be developed in first-year financial accounting courses?

Create

- Which thinking skills should be integrated into first-year financial accounting courses to enable students to reach the educational objective of 'create'?
- How could thinking skills enabling students to reach the educational objective 'create' be developed in first-year financial accounting courses?

2.4 Influence of technology

Academics teaching at a distance education institution, have limited or no contact with students and therefore it is important to explore the use of technology when assisting students with the development of various skills. Various e-learning tools, for example multi-media presentations, discussion forums, online assessments, blogs and broadcasting technologies are available in online learning environments.

- How are technologies assisting students to develop the skills needed to reach the educational objective of 'remember'? (Prompt for ideas on the possible future integration of technology)

- How are technologies assisting students to develop the skills needed to reach the educational objective of “understand”? (Prompt for ideas on the possible future integration of technology)
- How are technologies assisting students to develop the skills needed to reach the educational objective of “apply”? (Prompt for ideas on the possible future integration of technology)
- How are technologies assisting students to develop the skills needed to reach the educational objective of “analyse”? (Prompt for ideas on the possible future integration of technology)
- How are technologies assisting students to develop the skills needed to reach the educational objective of “evaluate”? (Prompt for ideas on the possible future integration of technology)
- How are technologies assisting students to develop the skills needed to reach the educational objective of “create”? (Prompt for ideas on the possible future integration of technology)

2.5 Good thinking habits

Good critical thinkers do not only have certain thinking skills, but also exhibit certain attributes or thinking habits. These thinking habits include inquisitiveness, open-mindedness, flexibility, valuing and understanding the opinion of others, fair-mindedness, honesty, cautious, perseverance, good discernment, the ability to adapt and meticulous accuracy.

- Which thinking habits should be developed in first-year financial accounting to enable students to become good critical thinkers?
- How is the teaching and learning environment contributing towards the development of good thinking habits in first-year financial accounting students? (Prompt for the use of technologies)

2.6 Ubuntu

The 2016 – 2030 strategic plan of Unisa emphasises the fact that the university is an African institution and academics should make use of principles of African philosophy in their teaching. Ubuntu is an African philosophy that represents the core values of humanness namely respect, dignity, generosity, obedience, humility, solidarity, caring, benevolence, hospitality, interdependence and communalism/altruism. Ubuntu therefore provides a 'value system' that guides the behaviour of individuals who are fused together in communal structures for example online classrooms.

- In what way and how are the principles of the African philosophy of Ubuntu contributing towards the development of critical thinking skills? (Prompt for ideas on the possible future improvement to include the principles)
- How are the principles of the African philosophy of Ubuntu applied in order to assist with the development of the thinking habits you identified earlier? (Prompt for ideas on the possible future improvement to include the principles)

ANNEXURE B

ETHICAL CLEARANCE FROM CEDU



UNISA COLLEGE OF EDUCATION ETHICS REVIEW COMMITTEE

Date: 2019/09/11

Ref: **2019/09/11/34580395/20/MC**

Name: Mrs HJ Dry

Student No.: 34580395

Dear Mrs Dry

Decision: Ethics Approval from
2019/09/11 to 2022/09/11

Researcher(s): Name: Mrs HJ Dry
E-mail address: vzylhj@unisa.ac.za
Telephone: +27 82 330 6561

Supervisor(s): Name: Dr AA van Rooyen
E-mail address: vrooyaa@unisa.ac.za
Telephone: +27 429 4539

Title of research:

Exploring the integration of critical thinking skills into the first-year financial accounting curriculum at an open distance and e-learning institution in South Africa.

Qualification: M. Ed in Open Distance learning

Thank you for the application for research ethics clearance by the UNISA College of Education Ethics Review Committee for the above mentioned research. Ethics approval is granted for the period 2019/09/11 to 2022/09/11.

*The **low risk** application was reviewed by the Ethics Review Committee on 2019/09/11 in compliance with the UNISA Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.*

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.



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2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the UNISA College of Education Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. No field work activities may continue after the expiry date **2022/09/11**. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

*The reference number **2019/09/11/34580395/20/MC** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Kind regards,



Prof AT Motlhabane
CHAIRPERSON: CEDU RERC
motlhat@unisa.ac.za



Prof PM Sebate
ACTING EXECUTIVE DEAN
Sebatpm@unisa.ac.za

 Approved - decision template – updated 16 Feb 2017

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ANNEXURE C

PERMISSION TO CONDUCT RESEARCH FROM RPSC



RESEARCH PERMISSION SUB-COMMITTEE (RPSC) OF THE SENATE RESEARCH, INNOVATION, POSTGRADUATE DEGREES AND COMMERCIALISATION COMMITTEE (SRIPCC)

23 October 2019

**Decision: Research Permission
Approval from 1 November 2019
until 31 December 2020 (data
collection period).**

Ref #: 2019_RPSC_050
Ms. Hendrina Jacoba Dry
Student #: 34580395
Staff #: 1131427

Principal Investigator:

Ms. Hendrina Jacoba Dry
Department of Financial Accounting
School of Accountancy
College of Accounting Sciences
UNISA
vzylhi@unisa.ac.za, 012 429-3284, 082 330 6561

Supervisors: Dr. Annelien van Rooyen, vrooyaa@unisa.ac.za; 012 429-4539
Prof Geesje van den Berg, ydberg@unisa.ac.za; 012 429-4895

Exploring the integration of critical thinking skills into the first-year Financial Accounting curriculum at an Open Distance and e-Learning institution in South Africa.

Your application regarding permission to conduct research involving UNISA employees, students and data in respect of the above study has been received and was considered by the Research Permission Subcommittee (RPSC) of the UNISA Senate, Research, Innovation, Postgraduate Degrees and Commercialisation Committee (SRIPCC) on 14 October 2019.

It is my pleasure to inform you that permission has been granted for your study. You may:

1. Use the work email addresses of the academics at the College of Accounting Sciences, particularly those lecturing FAC1502 and FAC1601 modules and invite them to participate in face-to-face interviews.
2. Gain access to the 2019 study guides, 2019 tutorial letters and previous examination papers uploaded on the 2019 myUnisa sites, pertaining to FAC1502 and FAC1601.



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You are requested to submit a report of the study to the Research Permission Subcommittee (RPSC@unisa.ac.za) within 3 months of completion of the study.

The personal information made available to the researcher(s)/gatekeeper(s) will only be used for the advancement of this research project as indicated and for the purpose as described in this permission letter. The researcher(s)/gatekeeper(s) must take all appropriate precautionary measures to protect the personal information given to him/her/them in good faith and it must not be passed on to third parties. The dissemination of research instruments through the use of electronic mail should strictly be through blind copying, so as to protect the participants' right of privacy. The researcher hereby indemnifies UNISA from any claim or action arising from or due to the researcher's breach of his/her information protection obligations.

Note:

The reference number 2019_RPSC_050 should be clearly indicated on all forms of communication with the intended research participants and the Research Permission Subcommittee.

We would like to wish you well in your research undertaking.

Kind regards,



pp. Dr Retha Visagie – Deputy Chairperson: RPSC

Email: visagr@unisa.ac.za, Tel: (012) 429-2478

Prof L. Labuschagne – Chairperson: RPSC

Email: llabus@unisa.ac.za, Tel: (012) 429-6368



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ANNEXURE D

PARTICIPANT INFORMATION SHEET



PARTICIPANT INFORMATION SHEET

Ethics clearance reference number: 2019/09/11/34580395/20/MC

Research permission reference number: 2019_RPSC_050

October 2019

Title: Exploring the integration of critical thinking skills into the first-year financial accounting curriculum at an open distance and e-learning institution in South Africa

Dear Prospective Participant

My name is Rika Dry and I am doing research with my supervisors towards a Master's degree in open distance and e-learning (ODEL) at the University of South Africa (Unisa). We are inviting you to participate in a study entitled *Exploring the integration of critical thinking skills into the first-year financial accounting curriculum at an open distance and e-learning institution in South Africa*.

WHAT IS THE PURPOSE OF THE STUDY?

I am conducting this research to determine the current level of integration of teaching of critical thinking skills into the first-year financial accounting curriculum as well as the possible contribution of the African philosophy of Ubuntu towards the teaching of critical thinking skills.

WHY AM I BEING INVITED TO PARTICIPATE?

You were chosen to participate in this research because of your teaching experience on first-year financial accounting. Your involvement in the teaching of first-year financial accounting and your contact details are known to the researcher because of a shared working relationship. Fourteen academics from the department of Financial accounting were identified to participate in this study.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?



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The study involves semi-structured interviews. Questions will be asked on the relevance of various critical thinking skills and attributes for the first-year financial accounting curriculum, how these skills and attributes are currently integrated into the curriculum, developed in an online environment and the possible contribution of the African philosophy of Ubuntu towards the development of these skills. Each interview should take approximately forty-five minutes.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Participating in this study is voluntary and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time and without giving a reason.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

The results of this study could benefit the participants as well as future first-year financial accounting students since recommendations will be made based on the findings regarding the integration of critical thinking skill development within an African ODeL environment.

ARE THERE ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

Other than investing your time, no negative consequences of participating in this research are envisaged. Should a negative event emanate from participating in this research, you are welcome to contact the researcher: Rika Dry, vzylhj@unisa.ac.za.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

Your name will not be recorded anywhere, and no one will be able to connect you to the answers you give. All the data, any publications, or other research reporting methods such as conference proceedings will only report on the data with reference to the subject area.

The interviews will be recorded and transcribed by an independent transcriber where after an independent coder will assist with the processing of the data. These individuals will maintain confidentiality and will be required to sign a confidentiality agreement. Your answers may be reviewed by people responsible for making sure that research is done properly, including the transcriber, external coder, supervisors, examiners and members of the Research Ethics Review



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Committee of Unisa. Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

Your anonymous data will be used as part of a master's dissertation and may be used for other purposes, such as a research report, journal articles and/or conference proceedings. Individual participants will not be identifiable in any such report.

HOW WILL THE RESEARCHERS PROTECT THE SECURITY OF DATA?

Electronic information will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. The electronic copies will be permanently deleted from the hard drive of the computer through the use of a relevant software programme once the data is outdated.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

No payment or incentives are offered for participating in this study.

HAS THE STUDY RECEIVED ETHICS APPROVAL?

This study has received written approval from the Research Ethics Review Committee of the College of Education, Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you would like to be informed of the final research findings, please contact Rika Dry at vzylhj@unisa.ac.za.

Should you require any further information or want to contact the researcher about any aspect of this study, please contact Rika Dry at vzylhi@unisa.ac.za or (012) 429 3281.

Should you have concerns about the way in which the research has been conducted, you may contact either of my supervisors:

Dr Annelien van Rooyen – vrooyaa@unisa.ac.za or (012) 4294539

Prof Geesje van den Berg – vdbero@unisa.ac.za or (012) 4294895



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Thank you for taking time to read this information sheet and for participating in this study.

Thank you.

Rika Dry
Senior lecturer
Department of Financial Accounting
Unisa



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ANNEXURE E

CONSENT TO PARTICIPATE IN RESEARCH

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the interview.

I have received a signed copy of the informed consent agreement.

Participant Name & Surname

Participant Signature.....Date.....

Researcher's Name & Surname.....

Researcher's signature.....Date.....



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