

Evaluating the effectiveness of a newly developed simulation in improving the competence of audit students

RR de Villiers
20509871

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Promoter: Prof Dr JP Fouché

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*In loving memory of my grandfather,
Ruben Absalom de Villiers*

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List of abbreviations, symbols and acronyms

ABC	Activity-based costing
ANCOVA	Analysis of the covariance
APC	Assessment of Professional Competence
BTS	Bartlett's test of sphericity
CA	Chartered Accountant
CA(SA)	Chartered Accountant of South Africa
CAAT	Computer-Assisted Audit Technique
CI	Client information and other documents requested
CPC	Code of Professional Conduct
CPD	Continuing Professional Development
<i>d</i>	Effect size (practical significance for nominal variables in statistics)
G	General items
IAASB	International Auditing and Assurance Standards Board
IAPS	International Auditing Practice Statement
IFRS	International Financial Reporting Standards
IRBA	Independent Regulatory Board for Auditors
ISA	International Standards on Auditing
ISAE	International Standard on Assurance Engagements
ISQC	International Standard on Quality Control
ISRE	International Standard on Review Engagements
ISRS	International Standard in Related Services
IT	Information technology
ITC	Initial Test of Competence
KMO	Kaiser-Meyer-Olkin measure of sampling adequacy
<i>M</i>	Mean (in statistics)
<i>N</i>	Frequency (in statistics)

p	See “Sig”
PG	Participant guide
PPE	Property, plant and equipment
(Pty) Ltd	Proprietary Limited
r	Effect size (practical significance for ordinal variables in statistics)
RA	Registered Auditor
SA	Simulation admin
SAAPS	South African Auditing Practice Statement
SAICA	South African Institute of Chartered Accountants
SDT	Self-determination theory
Sig (or p)	Statistical significance (in statistics)
SPSS	Statistical Package for the Social Sciences
Std Deviation	Standard deviation (in statistics)
TIPP	Training inside public practice
TOPP	Training outside public practice
t-test (t)	Levene’s statistical test of comparing two means (in statistics)
WP	Working paper templates

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Remarks to the reader

The reader should take note of the following:

- The literature review performed in this thesis is based on a plethora of sources ranging from the 1950s to 2014. This was done to not only ensure that the most relevant research findings were taken into account, but also to showcase the richness of research performed in this field to date and the developments over more than five decades.
- All source referencing was performed according to the **Harvard style** as set out in the 2012 version of the North-West University referencing guide.
- In cases of Internet sources or where an entire source is being referred to, no page number will appear in the in-text reference, which is in accordance with the above-mentioned reference guide.
- This thesis is presented in the **thesis format** according to the policies of the North-West University.
- The following **article was submitted** for publication to the below-mentioned IBSS-indexed and internationally peer-reviewed academic journal as follows:

De Villiers, R.R. & Fouché, J.P. 2015. Philosophical Research Paradigms and Research Methodologies: Guidelines and Best Practices for the Novice Accounting Education Researcher. *Journal of social sciences*, Unpublished. (ISSN: 0971-8923).

The submitted article was set out in line with the journal's submission guidelines.

Confirmation of the submission is included in **annexure C** on page 429.

- The following **articles were submitted** for publication to the below-mentioned DHET accredited peer-reviewed academic journals as follows:

De Villiers, R.R. & Fouché, J.P. 2015. The effectiveness of the teaching methodologies in audit education: A student perspective. *South African journal of higher education*, Unpublished. (ISSN: 1011-3487).

De Villiers, R.R. 2015. Evaluating the effectiveness of a newly developed simulation in improving the perceived broad competence of audit students. *SA journal of accounting research*, Unpublished. (ISSN: 1029-1954).

De Villiers, R.R. 2015. The effectiveness of simulations in audit education: Student perceptions at a SAICA-accredited South African university. *SA journal of accounting research*, Unpublished. (ISSN: 1029-1954).

The submitted articles were set out in line with the journals' submission guidelines.

Confirmation of the submissions is included in **annexure C** on page 429.

- All the articles were written by the first author as the PhD candidate (De Villiers, R.R.). The second author (Fouché, J.P.), the promoter of this PhD thesis, reviewed all the articles subsequent to their completion. The first author, as the PhD candidate, therefore contributed **more than 50%** to all articles, as required by the North-West University.

Summary

Title: Evaluating the effectiveness of a newly developed simulation in improving the competence of audit students

Key terms: Accounting education; audit classroom environment; audit education; audit lecturer; audit simulation; audit student; audit teaching-learning environment; auditing and assurance; assessment; competencies; generic and pervasive skills; learning approach; mixed methodology; teaching methodology.

Accounting education, and specifically audit education, has been calling for change in the teaching methodology applied by audit lecturers in higher education since the 1950s. This call for change is evident in current literature, which indicates that the approach followed in audit education has been creating a knowledge-to-application barrier. Despite the vigorous research on how to change the way audit students are taught at universities and other higher education institutions, consensus has yet to be reached on the teaching methodology that would produce competent and self-efficient young professionals entering practice after graduation.

The literature review performed in this thesis indicated a gap between research and practice in accounting education and research, first, because the research seems too technical for practitioners to understand and, secondly, too many research objectives seem unrelated to the realities of practice. Based on these findings, this thesis provides the novice researcher in accounting education with some guidelines on the research methodologies that could be applied in this field. It also highlights some best practices that should be followed when conducting research in this field.

It was noted from the literature that all the variables in the audit teaching-learning environment need consideration when attempting to bring change to this environment, because each variable would have an impact on transforming the current approach followed in audit pedagogy. These variables were identified as:

- The audit lecturer;
- The audit student;
- The subject content of the audit teaching-learning environment; and

- The milieu of the audit teaching-learning environment.

In an attempt to answer the call for change in audit education, this thesis sought to develop an audit simulation as an educational tool which takes into account all the variables in the audit teaching-learning environment and can be applied at universities and other audit training institutions around the globe. A framework for simulation design was developed based on the findings of the literature review and informed the development of the audit simulation. The simulation was, subsequently, applied and evaluated at a university accredited by the South African Institute of Chartered Accountants.

The newly developed audit simulation was evaluated by applying a mixed methodology research design, which had been proven to be a resourceful and trusted design in accounting education research in the past. Pre-test and post-test questionnaires were administered to the respondents as part of a quasi-experimental design. The quantitative findings from these tests were supported by qualitative findings from focus group discussions.

The empirical findings from the pre-test questionnaire confirmed the call for change and the room for improvement in the current teaching methodology in the audit classroom. Participants indicated lower levels in some competencies relative to other competencies, which also did not particularly score satisfactory when the competence levels were evaluated. The competencies that showed the lowest level of achievement due to the current teaching methodology, as perceived by the participants, included executing the work plan, evaluating the evidence and drawing conclusions, and drafting the report upon completion of the engagement. It was also established that the call for change was not confined to only one university in South Africa, which broadened the generalisability of the research findings, conclusions and recommendations of this study.

The results of both the quantitative and qualitative analysis support the view that the newly developed audit simulation is able to assist in bringing change to audit education. The simulation had a positive effect on the audit students' perceived competence levels in the competencies of auditing and assurance, and the various generic and pervasive skills tested in this study. Furthermore, it was established that the audit simulation had a greater effect on the audit students' perceived broad competence levels (i.e. auditing and assurance, and generic and pervasive skills) and their understanding of the audit process as a whole, in relation to just attending normal lectures. The qualitative findings from the focus group discussions informed the quantitative findings by indicating that the audit simulation proved to be an instrument that, among other things:

- Gave students the opportunity to obtain a holistic view of the audit process;
- Assisted students in visualising how the audit theory is applied in practice;
- Actively involved the students in the learning process; and
- Replicated audit practice.

Finally, it was confirmed that the newly developed audit simulation takes into account the variables in the audit teaching-learning environment which need consideration if transformation is to take place in the way the audit subject is currently being taught at higher education level. Recommendations on the way forward in audit education, based on the findings in this thesis, were also provided.

This study provides audit lecturers and other audit educators around the world with a newly developed, empirically evaluated audit simulation which can be applied in the audit classroom as well as assist in answering the current call for change to audit education.

Opsomming

Titel: Evaluering van die doeltreffendheid van 'n nuut ontwerpte simulاسie ter verbetering van die bevoegdheid van ouditstudente

Sleuteltermes: Rekeningkunde-onderrig; ouditklaskamer-omgewing; ouditonderrig; ouditdosent; ouditsimulasie; ouditstudent; oudit-onderrig-leer-omgewing; oudit en gerusstelling; assessering; bevoegdhede; generiese en omvattende vaardighede; leerbenadering; gemengde metodologie; onderrigmetodologie.

Sedert die 1950's weerklink 'n oproep om verandering in die metodologie wat in rekeningkunde-onderrig, en spesifiek ouditonderrig, in hoër onderwys gevolg word. Hierdie oproep blyk duidelik uit die literatuur wat aandui dat die huidige onderrigbenadering in ouditkunde reeds 'n kennis-tot-toepassing-struikelblok geskep het. Ten spyte van deurtastende navorsing om die wyse te verander waarop ouditstudente by universiteite en ander hoëronderwysinstansies onderrig word, ontbreek konsensus oor die onderrigmetodologie wat bevoegde en selfdoeltreffende jong beroepslui vir die praktyk sal lewer.

Die literatuuroorsig wat in hierdie proefskrif onderneem is, toon 'n gaping tussen navorsing en praktyk in rekeningkunde-onderrig en -navorsing, eerstens omdat die navorsing te tegnies is vir praktisyns om te verstaan, en tweedens omdat te veel navorsingsdoelwitte nie met die realiteit van praktyk ooreenstem nie. Op grond van die bevindinge verskaf hierdie proefskrif vir die nuweling-navorser in rekeningkunde-onderrig 'n paar riglyne oor die navorsingsmetodologie wat in hierdie veld gevolg kan word. Die studie beklemtoon ook etlike beste praktyke wat in navorsing in die veld toegepas kan word.

Die literatuur het verder onthul dat, wanneer verandering in die oudit-onderrig-leer-omgewing oorweeg word, al die veranderlikes in hierdie omgewing betrek moet word omdat elkeen 'n impak op die transformering van die huidige benadering in ouditpedagogie sal hê. Die volgende veranderlikes is geïdentifiseer:

- Die ouditdosent;
- Die ouditstudent;
- Die vakinhoud van die oudit-onderrig-leer-omgewing; en

- Die milieu van die oudit-onderrig-leer-omgewing.

In 'n poging om die oproep om verandering in ouditonderrig te antwoord, het hierdie proefskrif 'n ouditsimulasie ontwerp as opvoedkundige instrument wat al die bogenoemde veranderlikes in die oudit-onderrig-leer-omgewing in ag neem en in universiteite en ander ouditopleidingsinstansies wêreldwyd toegepas kan word. 'n Raamwerk vir simulatie-ontwerp is op grond van die bevindinge uit die literatuuroorsig ontwikkel en het die fondasie vir die ontwikkeling van die ouditsimulasie gelê. Die simulatie is gevolglik toegepas en geëvalueer by 'n universiteit wat by die Suid-Afrikaanse Instituut vir Geoktrooieerde Rekenmeesters geakkrediteer is.

Die nuut ontwikkelde ouditsimulasie is geëvalueer deur 'n gemengde-metode-navorsingsontwerp te volg wat reeds as 'n nuttige en betroubare ontwerp vir navorsing in rekeningkunde-onderrig bevind is. Voortoets-natoets-vraelyste is as deel van 'n kwasi-eksperimentele ontwerp op die respondente afgeneem. Die kwantitatiewe bevindinge van die toetse is ondersteun deur die kwalitatiewe bevindinge van fokusgroepbesprekings.

Die empiriese bevindinge uit die voortoets-vraelys het die oproep om verandering en ruimte vir verbetering in die huidige onderrigmetodologie in die ouditklaskamer bevestig. Deelnemers het lae vlakke getoon in sommige bevoegdhede relatief tot ander bevoegdhede, wat ook nie bevredigende tellings in bevoegdheidsvlakke behaal het nie. Die bevoegdhede wat die laagste vlak van bereiking weens die onderrigmetodologie getoon het, volgens die deelnemers se persepsie, sluit in die uitvoer van die werksplan, evaluering van die bewyse en afleiding van gevolgtrekkings, en opstel van die verslag ná voltooiing van die aanstelling. Daar is ook vasgestel dat die oproep om verandering nie beperk is tot slegs een Suid-Afrikaanse universiteit nie – dit verbreed die veralgemeenbaarheid van die proefskrif se navorsingsbevindinge, gevolgtrekkings en aanbevelings.

Die resultate van die kwantitatiewe sowel kwalitatiewe ontleding ondersteun die siening dat die nuut ontwerpte ouditsimulasie in staat is om verandering in ouditonderrig te bewerkstellig. Die simulatie het 'n positiewe uitwerking op die ouditstudente se waargenome bevoegdheidsvlakke in oudit en gerusstelling gehad, asook in die verskeie generiese en omvattende vaardighede wat in die studie getoets is. Verder is bepaal dat die ouditsimulasie 'n groter uitwerking gehad het op die ouditstudente se waargenome breë bevoegdheidsvlakke (nl. oudit en gerusstelling, en generiese en omvattende vaardighede), asook hulle begrip van die ouditproses as geheel, in vergelyking met die bywoning van normale klasse. Die kwalitatiewe bevindinge uit die fokusgroepbesprekings is besiel deur die

kwantitatiewe bevindinge wat getoon het dat die nuwe ouditsimulasie as instrument onder andere die volgende doen:

- Gee studente die geleentheid om 'n holistiese beeld van die auditproses te verkry;
- Help studente om te visualiseer hoe auditteorie in praktyk toegepas word;
- Betrek studente aktief in die leerproses; en
- Bied 'n realistiese weergawe van auditpraktyk.

Laastens is bevestig dat die nuut ontwerpte ouditsimulasie inderdaad die veranderlikes in die audit-onderrig-leer-omgewing in ag neem wat nodig is vir transformasie in die wyse waarop die auditvak tans op hoëronderrigvlak aangebied word. Aanbevelings vir die pad vorentoe vir auditonderrig is op grond van die bevindinge van die proefskrif gemaak.

Die studie verskaf aan auditdosente en ander auditopvoeders regoor die wêreld 'n nuut ontwerpte, empiries geëvalueerde ouditsimulasie wat nie net in die auditklaskamer toegepas kan word nie, maar wat ook kan help om die huidige oproep om verandering in auditonderrig te beantwoord.

Chapter 1

Introduction, purpose and scope of the study

“Education is the most powerful weapon which you can use to change the world.”

– Nelson Mandela

1.1 Introduction

A Chartered Accountant in South Africa [CA(SA)] is expected to have the highest level of knowledge in the various fields in accounting. In addition, a sound understanding is required of the economic and competitive environment within which an entity operates, the competitive positioning of the entity within that environment, and the entity's operational, organisational, governance and reporting structures (SAICA, 2010:5). From first-hand experience, the author of this thesis (henceforth, the author) can attest that these abilities are not acquired effortlessly and that successful completion of a dynamic training process is required over a period of at least seven years.

In general, this process starts with the completion of an accounting degree and a postgraduate qualification in accounting at a university or other higher education institution accredited by the South African Institute of Chartered Accountants (SAICA). On successful completion of this formal education process, an aspiring CA(SA) has to complete a training contract in audit practice of at least three years while attempting to pass two board examinations set by SAICA (2010:6). This is the most common route followed in becoming a CA(SA), although there are alternatives. When a training programme is accredited by SAICA, it certifies, first, that the relevant training institution has established suitable resources which, if used successfully, should enable it to deliver the programme at the mandatory standards and levels of quality and, secondly, that the programme meets SAICA's requirements in terms of the standards of education (SAICA, 2010:3).

The general accounting and finance degrees at universities and other higher education institutions often include the study of auditing. Although many of these institutions are fully accredited by SAICA, there is no consensus with regard to the best approach in teaching auditing at an undergraduate and postgraduate level to ensure (Barac, 2012:48; Helliard *et al.*, 2006:6):

- That accounting students obtain a holistic view of auditing; and
- How this theoretical knowledge can be applied to practice.

Auditing is one of the accounting fields that is the most interrelated with practice, because it requires an elevated level of knowledge in accounting, taxation, financial management and corporate governance to ensure high-quality audits in practice. Currently, however, audit textbooks customarily take up a theoretical approach to conveying the information required by the International Standards on Auditing (ISAs) to the inexperienced minds of audit students (Chiang *et al.*, 2011).

The past and current approach followed worldwide at higher-education level requires accounting students to take written examinations (Barac, 2012:48; Siegel *et al.*, 1997:217; Steenkamp & Von Wielligh, 2011:9). These examinations assess the students' understanding of the technical knowledge of the various subjects in the accounting field by having them applying it in an examination-set scenario (Siegel *et al.*, 1997:217; Steenkamp & Von Wielligh, 2011:9). Barac (2012:48) stated that, although this has been the methodology followed for many years, the shift in the current economic environment is emphasising the need for change in the focus of teaching auditing to ensure that audit education and the approach followed to prepare audit students for practice remain suitable.

This issue has been identified in numerous previous studies, such as those mentioned previously, and even as early as 1997, by Adler and Milne (1997b:110-116). These authors confirmed that accounting courses still overemphasise the technical substance of the various subjects, more specifically auditing, and do not create adequate scope for developing those skills that are required in practice, even as this is where the application of technical knowledge is most crucial.

These studies have proven that the *approach* followed currently by universities and other higher education institutions is creating a *knowledge-to-practice-application barrier*. This barrier is hindering students especially in successfully applying themselves when entering professional audit practice after graduation. In an attempt to overcome this barrier, the entire *audit teaching-learning environment* needs to be considered, together with all the relevant variables, before any alterations and improvements to the current approach can take place.

Rebele *et al.* (1991:221) argued that the accounting education researcher needs to consider variables such as the *student*, the *lecturer* and the *methods of assessing* the student's competence. Research by Entwistle *et al.* (2002), as part of a project carried out collaboratively by Edinburgh, Durham and Coventry Universities in Britain, identified

variables such as *course content*, *guidance* and *support* provided to the student by the lecturer, as well as the *quality of relationship* between the student and the lecturer. They further stressed the *skills and knowledge of students* as significant variables. *Biographical factors* and *other barriers* outside the control of the students were identified as variables affecting the learning process (Entwistle et al., 2002; Fouché, 2006:42; Guney, 2009:57; Van der Merwe, 2013:90). Similarly, Patrick and Smart (1998:165) indicated that the learning environment involves a number of components (i.e. variables) such as the *teaching method*, *assessment* and *feedback approaches*, *course structure*, *subject content*, *curriculum* and *teacher effectiveness*.

Some of the variables mentioned by Booth et al. (1999:280) support those identified by Patrick and Smart (1998:165), such as *teaching methodologies* and *curriculum*, but they added *students' perceptions* and *prior experiences* as variables in the teaching-learning environment. In a study by Fouché (2006:45), the *milieu* (classroom), which encompasses the *physical classroom* and the *surrounding atmosphere*, was identified as a critical variable. Fouché (2006:53) also stressed *issues that affect the curriculum content*, such as changing times. In addition, Wilkinson (1992:27), as part of his/her learner model, emphasised that the *general characteristics of lecturers* play an important role in the effectiveness of lecturers, as does *communication* between the student and the lecturer, due to the fact that these are influential variables in achieving success in learning. In a more recent study by Barac (2012:52), the *learning approaches* followed by accounting students were identified as significant variables in the audit-specific learning process.

In conclusion, the overarching variables that affect the learning process and in turn the overall audit teaching-learning environment are as follows:

- **The audit lecturer;**
- **The audit student;**
- **The subject content of the audit teaching-learning environment; and**
- **The milieu of the audit teaching-learning environment.**

In the paragraphs to follow (1.1.1 to 1.1.4), these variables are explored so as to set the tone for the attempt to bridge the *knowledge-to-practice-application barrier* in current audit education.

1.1.1 The audit lecturer and the teaching-learning environment

Lecturers are seen as the most important variable in the audit teaching-learning environment, because they usually have control over the majority of other variables (Fouché, 2006:15). These variables include the *teaching methodologies* applied in audit education, *assessment* and *feedback approaches* and, to a broader extent, the *general characteristics of being an effective lecturer* such as the quality of communication between the lecturer and the student (Barac, 2012:52).

A variety of methodologies to teach not only auditing, but also the ability to grasp how the knowledge of the various subjects in accounting fits into audit, have been implemented by academics and other educators on a global scale (Adler & Milne, 1997a:192-193; Fouché, 2006:84; Grace & Gilsdorf, 2004:169; Tempone & Martin, 2003:232-238). These methods include the use of *passive* or more traditional classroom methods, as well as more *active* and *blended* learning methods such as simulations and case studies (Adler & Milne, 1997a:192-193; Fouché, 2006:92; Grace & Gilsdorf, 2004:169; Tempone & Martin, 2003:232-238; Van der Merwe, 2013:142).

All these methods have been heavily debated and tested, with the simulation and case study methods being advocated extensively (Hassall & Milne, 2004:135-138). Research by Groomer *et al.* (1992:48-50) established that audit students participating in an audit simulation and case studies were more competent in applying information which had been presented first in a lecture format, due to the fact that they were able to place themselves in an imitated audit practice situation (i.e. milieu). Pillsbury (1993:130-135) also found that an active learning environment helps audit students to develop not only the ability to apply technical knowledge in a real-life situation, but also vital soft skills. The importance of establishing or setting the physical audit classroom within the context of an actual audit was further stressed by Chiang *et al.* (2011) recently who pointed to the following benefits:

- Audit students will have an improved understanding of the ISAs;
- They will be introduced to the world of auditing that exists outside the prescribed audit textbooks; and
- They will receive the opportunity to be part of an audit experience prior to graduation and entering the corporate world.

Extensive research has been conducted in the field of teaching methodologies in general, with limited consideration given to assessment and feedback approaches applied in audit

education. Finally, audit lecturers, their views, and the guidance and support they offer the students, together with the quality of the relationship between the students and the lecturers, will all have a direct effect on the learning process of the students (Entwistle *et al.*, 2002). All of these variables which are controlled, some to a greater extent, by the audit lecturer, play a critical part in changing the current approach in audit education. The impact of the audit lecturer and the teaching-learning environment on student learning is discussed in detail in chapter 3 (page 55).

1.1.2 The audit student

Lecturers need to understand the factors affecting their students if they are to apply the correct teaching methodology in conjunction with the other variables over which they have some sort of control (Fouché, 2006:37). As indicated by Barac (2012:52), the *learning approaches* applied by audit students are an important consideration for lecturers in their attempt to apply a correct teaching methodology in audit education. Hall *et al.* (2004:490-492) highlighted two learning approaches followed by accounting students in general, the first being the *deep learning approach* followed by the *surface learning approach*.

The deep learning approach results in high-quality learning outcomes because the student is seeking a personal understanding of the content that is being studied, together with an all-embracing embellishment of the study material, resulting in the active organisation of the learning content (Dart *et al.*, 2000:262; Entwistle, 2001:595-598; Flood & Wilson, 2008:227-229; Henning, 2013:13-14; Jackling, 2005:274).

Surface learning, on the other hand, is a study approach in which students memorise a set of facts which can be restated later in the form of an examination or orally given circumstance (Dart *et al.*, 2000:262; Entwistle, 2001:595-598; Flood & Wilson, 2008:227-229; Henning, 2013:13-14; Jackling, 2005:274). The study approach followed by audit students currently tends to be surface learning, the reason being that the existing teaching practices in audit education do not always allow for a deep learning approach to be followed (see paragraph 1.1, page 1). From the author's observations, audit students experience the subject as abstract due to their limited exposure to the auditing environment. In this way, the surface learning approach is reinforced.

This fact was highlighted by Byrne and Flood (2010:136) who pointed out the criticisms from various reports that accounting programmes in general do not encourage students to adopt a deep learning approach. They referred to the call for lecturers in the accounting education

sector to re-examine their academic programmes so as to change their current methods. This would improve the quality of student learning and produce independent students ultimately (Byrne & Flood, 2010:136).

The call for audit education to remain methodologically relevant is further stressed by the fact that a new generation of technologically advanced students are enrolling for the various disciplines offered at universities and other higher education institutions (Jones *et al.*, 2012:722). Jones *et al.* (2012:722) claimed that the students of today, having grown up with computers and the Internet, are said to have a natural ability and high skill level when it comes to the use of new technologies. Therefore, lecturers and learning institutions have a duty to adapt in reply to the demands of this new generation.

The Becta (formally known as the British Educational and Communications Technology Agency) research report on emerging technologies for learning, noted that this so-called Net Generation has never known a life without the Internet and the technologies it brings to the table (Becta, 2008). The report goes further to state that (Becta, 2008):

“Although educators may see students every day, we don’t necessarily understand their habits, expectations or learning preferences. But it is obvious that technology is an integral part of their lives. To them, instant messaging, text and Google are verbs, not applications. The Net Generation have integrated technology into everything they do, essentially putting their lives on the Internet.”

This statement supports the notion put forward by Jones *et al.* (2012:722) that the Net Generation demands quick access and rapid rewards, is impatient with linear thinking and parades a different capacity for multitasking which will, inevitably, affect their learning approaches.

In addition to the learning approaches followed by the Net Generation, *biographical factors* and *other barriers* in learning which audit students are facing in general, should also be considered (Entwistle *et al.*, 2002; Fouché, 2006:42; Guney, 2009:57; Van der Merwe, 2013:90). Some of these factors include *gender, age, race, mother tongue* and the *quality of the education* received by students at universities or other higher education institutions (Alfan & Othman, 2005:340; Byrne & Flood, 2008:208; Crawford & Wang, 2014:436; Guney, 2009:57; Van Wyk, 2011:156). These biographical factors, barriers in learning and students’ learning approaches will all have an impact on audit students as a variable in the audit teaching-learning environment. Audit students, their learning approach and the factors

leading to the choice of a specific approach are elaborated on in chapter 4 (page 110), as well as the biographical factors and other barriers to student learning.

1.1.3 The content of the audit teaching-learning environment

SAICA (2010:6) has established a competency framework (version 2), issued on 22 October 2010, which sets out the required competencies of CA(SA)s upon entering the auditing profession. This framework was developed based on extensive research in international trends and local consultation with practitioners, and included a substantial amount of input from academe (Olivier, 2014). The education and training of aspiring CAs are competency based to ensure that students entering the profession have the necessary knowledge and practical skills to perform the tasks of a CA in today's business environment (SAICA, 2010:3; Sharma, 1997:128). Thus, South African universities or other higher education institutions that present an academic programme offering students entry into SAICA's Initial Test of Competence (ITC) (i.e. the first board examination), have to develop their curriculum to meet the requirements set by SAICA (2010:6) in its competency framework.

This framework requires a CA to have mastered a broad range of competencies upon entering the profession. With these competencies, a CA can be seen as a leader in the professional accounting environment (SAICA, 2010:4) and be perceived as competent in: i) *strategy, risk management and governance*; ii) *financial management*; iii) *auditing and assurance*; iv) *accounting and external reporting*; v) *taxation*; vi) *management decision making and control*; and vii) *generic and pervasive skills, such as ethics and professionalism, personal attributes and professional skills* (SAICA, 2010:4). It should be noted that it will not be possible for SAICA accredited universities to equip students with all the necessary competencies on the highest level, as some of these competencies will only be developed in full by means of on the job training (i.e. during the training contract).

It is thus clear that change is needed in the current methodology to develop the audit student into an entry-level, professional auditor who will be able to embrace the challenges set in practice, especially since the methodology is more procedural than conceptual in nature (Valadas *et al.*, 2010:262-263). This call for change has come from an accounting profession that emphasises the importance of a number of generic and pervasive skills which will enhance the accounting students' ability to be hired and to apply themselves in public practice (Saunders & Machell, 2000:290-298; Tan *et al.*, 2004:51-53). These skills, over and above technical knowledge, are essential for entry-level auditing professionals in today's competitive economic environment (De Lange *et al.*, 2006:365-370).

The set of generic and pervasive skills entails a number of fundamentals which consist of cognitive, affective and behavioural elements (Ballantine & McCourt Larres, 2004:179-180; Nikolai, 1996:193). Cognitive skills include skills that form part of the thought process, such as conceptual, problem solving and critical thinking (Ballantine & McCourt Larres, 2004:179-180; Nikolai, 1996:193). Emotion or disposition encompasses certain characteristics of an individual which can be associated with effective skills, whereas behavioural skills take into account the actions performed by the trainee auditor, such as time management, and the ability to work in a team and communicate in both oral and written format (De Lange *et al.*, 2006:365-370; Nikolai, 1996:193-195).

Although the approach to teaching auditing has changed over the years to accommodate the development of generic and pervasive skills, audit academics still find it difficult to incorporate these skills into the curriculum due to a lack of time and resources (Morgan, 1997:94-95). Recently, Crawford *et al.* (2011:115) noted that professional accountancy bodies around the world have stressed the need for all graduates to be employment ready and able to demonstrate not only subject-specific knowledge and skills, but also the pervasive and generic skills required to be successful after graduation. These skills are, therefore, still lacking.

Numerous studies in audit education evaluating curriculum at higher education institutions have been performed over the years, starting as early as the late 1970s (Smith, 1978:501). In one of these studies, Smith (1978:501) recognised several issues in audit curricula and emphasised the importance of professionalising and bringing change to the audit classroom. Another study, by Yardley *et al.* (1994:155), attempted to further audit education curriculum by investigating the internationalisation of audit education. They sought to describe course content that can be incorporated into existing auditing course material with the aim to standardise the method of teaching auditing at higher education institutions. Other proposals to course and curriculum development were made by Ballou *et al.* (2008:231) due to the extensive changes in business, regulatory and auditing environments. Ballou *et al.* (2008:235-241) explored the changes in these three environments and suggested four alternatives to address these challenges:

- An international-firm approach;
- A local or regional approach;
- A theory-driven, decision-making approach; and
- A standards-driven approach.

With the international-firm approach, audit lecturers should keep in mind that the majority of their students accept offers from international accounting firms. The auditing courses should thus be tailored to develop a detailed understanding of an organisation in order to facilitate a risk-based audit approach (Ballou *et al.*, 2008:235). A local or regional approach should be followed where the majority of students go to work for regional or local accounting firms or small businesses and corporations (Ballou *et al.*, 2008:235). Lecturers at universities or other higher education institutions should then focus on the audit approaches used by these types of firms (Ballou *et al.*, 2008:235). Where focus is placed on the skills, knowledge and decision making related to effective auditing, regardless of the environment in which students will be auditing after graduation, a theory-driven, decision-making approach is followed, whereas a standards-driven approach focuses on standards and regulation content (Ballou *et al.*, 2008:239-240). The current approach followed in South Africa appears to be standard driven.

A recent study into audit curriculum includes research conducted by Ulrich *et al.* (2011:935-936) in an attempt to close the expectation gap between practitioners and audit educators. An assessment was performed of the quality of audit curriculum at higher education institutions with the aim to bridge the differing educational objectives of practitioners and educators, opposing perceptions of the purpose of student auditing, and alterations taking place inside the profession (Ulrich *et al.*, 2011:935-936). All these studies have contributed to the development of audit education and curricula at universities and other higher education institutions.

Based on these findings from the literature, the proposed change to audit curriculum, specifically the approach followed when setting audit curriculum, is in desperate need of exploration in an attempt to close the expectation gap between audit practitioners and audit lecturers. This exploration also formed the basis for the development of the learning outcomes to be achieved in the new audit simulation discussed later in this chapter (paragraph 1.7.3, page 20). The audit curriculum and the content requirements of such a curriculum in South Africa are discussed in chapter 5 (page 138).

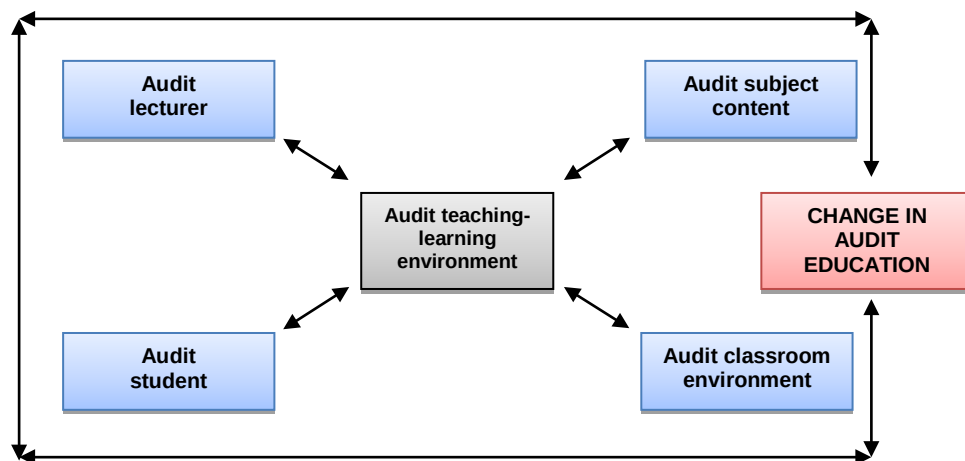
1.1.4 Summary of the audit teaching-learning environment

As established earlier, a variety of factors which affect the **audit lecturer**, the **audit student**, the **audit subject content** and the **audit classroom environment** need consideration when attempting to revolutionise the current approach to audit education.

The change in approach to audit education should start with the audit lecturers, because they have control over the majority of the other variables such as *teaching methodologies*, *communication* between them and the audit students, *assessment* and *feedback approaches*, the *provision of guidance and support* to the audit students, as well as *ensuring a good quality relationship* between these two variables in the audit teaching-learning environment. If the audit lecturers were to attempt changing the approach in audit education, they would need to understand their students' *learning approaches* and the *biographical matters* and *other barriers* hindering student performance.

The third critical variable is the content requirements in the audit teaching-learning environment: The audit curriculum needs to be based on these content requirements in SAICA's competency framework. Thus, universities and other higher education institutions should, as far as possible, develop their curriculum in such a manner that student achievement is not hindered and that no expectation gap is created between audit practitioners and audit educators. It should include the *subject content* that *informs the competencies* related to *auditing and assurance*, as well as provide an opportunity for the development of *generic and pervasive skills*. The audit lecturer should, therefore, *change the audit classroom milieu* in such a way that students are confronted with a *real-life audit practice situation* that will, in turn, assist them in mastering the aforementioned competency requirements. Figure 1-1 illustrates the variables in the audit teaching-learning environment which need consideration in order to change the current approach to audit education.

Figure 1-1: The audit teaching-learning environment



(Source: Author)

The next section (paragraph 1.2, page 11) highlights the findings and conclusions of some of the previous research in this field dating back as far as 1984. This forms the basis of the problem statement, which is formulated in paragraph 1.3 (page 15).

1.2 Previous research and topic actuality

As mentioned in the introduction (paragraph 1.1.3, page 7), many studies have placed focus on research in audit curriculum and how it affects both students and audit lecturers. Several other areas related to audit education have been researched to date and include challenges to audit education in the 21st century (American Accounting Association, 2003:241); the effect of work experience on audit students' competence (Ferguson *et al.*, 2000:137); behavioural research in auditing and its impact on audit education (Knechel, 2000:695); and generic skills in audit education (Crawford *et al.*, 2011:115).

The American Accounting Association (2003:241) reported on a survey conducted during 2000-2001 of auditing and assurance courses in the United States and several other countries. Data from many curricula were analysed on a number of dimensions and results indicated that considerable changes have taken place in content and pedagogy (e.g. increased use of active learning methods) in respect of introductory and advanced audit courses over the past several years (American Accounting Association, 2003:241).

A more recent study, presented by Ulrich *et al.* (2011:935) at the annual conference of the American Society of Business and Behavioural Sciences held in Las Vegas, gave contrasting views about the findings of the American Accounting Association (2003:241). The paper indicated that, despite these so-called changes that have taken place in audit curriculum over the past years, audit practitioners are still dissatisfied with audit training at higher education institutions due to the shortcomings in practical training and other pedagogies within the audit curriculum.

Ferguson *et al.* (2000:137) investigated work experience as alternative means of audit education and training. They found that some degree of practical experience in audit assists students in understanding and obtaining a universal view of audit in general. Knechel (2000:695), on the other hand, researched the significance of incorporating various generic and pervasive skills, such as the ability to exercise professional judgment, into audit education. Knechel (2000:659) stated that:

“...the need for audit students to be exposed to a breadth of substantive business and accounting topics is more pronounced than ever before. Auditors do not merely dwell

in a world of debits and credits, but rather must deal with the more challenging issues of risks, controls, performance measurement, and audit evidence. To rise to these challenges, new graduates need to develop skills in critical reasoning, information search, interpersonal interaction, communication, and decision making”.

More research on soft skills or generic skills in audit education was conducted by Crawford *et al.* (2011:115) recently, adding to the research performed by Knechel (2000:695) a decade earlier. The former researchers not only accentuated the importance of such skills and their incorporation into audit curriculum, but also identified which of these skills practitioners expect universities to teach.

An area of much research in the field of audit education pertains to the use and effect of Information Technology (IT) in audit education in general. The use of computers in audit training and research dates back as far as 1984 when a group of researchers formed a committee on behalf of the American Accounting Association to explore the application of computers in audit education and research (Vasarhelyi *et al.*, 1984:98). Results of this study indicated that higher education institutions do not adequately incorporate the use of IT into the audit classroom (Vasarhelyi *et al.*, 1984:103). They further stressed that education and practice should remain up to date with developments in the IT environment and its effect on audit education (Vasarhelyi *et al.*, 1984:103).

A number of years later Viator and Curtis (1998:19) explored computer auditor reliance in automated and non-automated controls as a function of training and experience. In this study the researchers investigated the relationship between the educational and work background of computer auditors and their perception of the effectiveness of internal control procedures for specific control objectives in computerised environments (Viator & Curtis, 1998:19). The results of this exploratory analysis suggested that, in some cases, there appears to be a connection between computer auditors and their academic education in auditing and their work experience (Viator & Curtis, 1998:19). This indicated that the incorporation of IT into audit curriculum at higher education institutions has an effect on auditors' ability to audit with the help of IT software (Viator & Curtis, 1998:19).

One predominant area of research in audit education has been the use of different methodologies in teaching audit at universities or other higher education institutions. The methodologies include those followed by audit educators to educate students in obtaining an all-inclusive understanding of audit subject content. The majority of studies in this area evaluated students' perceptions on methodologies. Some of these studies are summarised in table 1-1:

Table 1-1: Audit teaching methodologies – Retrospective review

<i>Research area in audit education</i>	<i>Research and findings</i>	<i>Author</i>
Risk identification and evaluation; materiality calculations; risk responses; completion procedures.	Title: Deimante Ltd.: Case study for introductory auditing course. Research: A study designed for auditing students to critically apply their auditing knowledge as they work through the audit process.	Agrawal and Hancock (2012:355)
Pre-engagement activities; planning; delivering working papers.	Title: The perceptions of trainee accountants of the usefulness of an audit simulation at university level. Research: This study obtained trainee accountants' views on the usefulness of simulations in understanding pre-engagement and planning activities related to an audit.	Steenkamp and Von Wielligh (2011:9)
Debate on the kind of case studies that are useful in audit education.	Title: Adding value to audit education through living cases. Research: This paper aimed to address the perceived failure of university teaching to foster critical understanding of audit practice and to identify a potential remedy.	Drake (2011:203)
Financial controls and soft-skill training.	Title: An audit learning experience: A pilot project through cooperation with a third sector organization. Research: Final-year audit students were given the opportunity to apply their knowledge and skills to a real-life situation in the form of a cooperative education and service learning project.	Tonge and Willett (2012:171)

To date, the most prominent area in which audit education research has been performed is the use and usefulness of audit simulations or similar instruments as educational tools in the audit classroom. The studies listed in table 1-1, together with other literature available on the

use of different teaching methodologies in audit education (e.g. Bagley & Harp, 2012:1131; Botha, 2014:1; Miller & Savage, 2009:93; Steenkamp & Rudman, 2007:23), placed focus on students' perceptions on the effectiveness of these methods and the effect they have on student learning. Although these simulations incorporated various sections of the audit process, only a *small* number of the studies *incorporated all the steps* in the audit process, and in those which did the simulations were applied in *introductory audit courses* resulting in very *limited* exposure for students to the vast number of requirements stipulated in the ISAs. Furthermore, *no studies* were identified that evaluated the effect of simulations on achieving the *specific competencies* related to the audit subject and included in the SAICA competency framework.

As stated previously (paragraph 1.1, page 1), the teaching methodologies at higher education level currently involve lectures and written examinations to assess accounting students' ability to apply knowledge and skills (Siegel *et al.*, 1997:217; Steenkamp & Von Wielligh, 2011:9). A study by Dempsey and Stegman (2001) attempted to identify the best teaching methodology for accounting students, i.e. active methodologies. However, the results were *difficult to apply*, although the conclusion was reached that audit simulations will enhance the accounting students' ability to apply knowledge in a live simulation.

From these studies, it is clear that, for a few decades, researchers on the international front have been attempting to minimise some of the issues in audit education. However, Tonge and Willet (2012:171) stressed that students *still* find auditing baffling and difficult *despite* these *various attempts*. This phenomenon could be ascribed to another pressing issue facing accounting education research, as identified by Elliot (2010:1) and Fouché (2013:137) recently. According to these researchers, a *gap* exists between researchers and practitioners in accounting education and research, because *research* seems too *technical* for *practitioners* to *understand*, and too many of the *research objectives* seem *irrelevant* to the problems experienced in practice.

It can, thus, be concluded that there is a need for more comprehensive research on an effective teaching approach in auditing at universities or other higher education institutions. This is imperative if an attempt is to be made to bring about change to the methodology applied in audit classrooms.

1.3 Problem statement

In light of the introduction (paragraph 1.1, page 1) and the previous research described earlier in this chapter (paragraph 1.2, page 11), the problem statement is formulated as follows:

The approach followed to date in preparing audit students at higher education level for the actual auditing environment which they will form part of still requires change. This change could assist in answering the auditing profession's call for students to be involved more actively in the process of developing the necessary skills and knowledge to be able to conduct an audit in terms of the ISAs. To date, there has not been a comprehensive study incorporating the whole audit process and broad content addressing the shortcomings.

1.4 Hypothesis

The hypothesis tested in this study is formulated as follows:

The implementation of a comprehensive audit simulation, which addresses all the variables in the audit teaching-learning environment, in audit curricula at universities or other higher education institutions will enhance the perceived broad competence of audit students.

1.5 Research objectives

Taking into account the problem statement (paragraph 1.3, page 15) and hypothesis (paragraph 1.4, page 15), it is essential that more intervention takes place with regard to the teaching approach in audit education at universities and other higher education institutions.

The **overarching primary objective** this study aims to achieve is, therefore, to:

Intervene and assist in the process of bringing change to the current approach followed in audit education. This will be done primarily by developing an instrument, i.e. a simulation project, which can be implemented by universities and other higher education institutions in South Africa and globally, as the ISAs are internationally applied in audit practice.

In order to address this all-inclusive main objective, this study aimed to achieve **eight secondary research objectives**. These objectives and their motivations are framed next:

- i. *The exploration of research methodology(s) applicable to accounting education research based on an explorative study into some philosophical paradigms and other underpinnings of the qualitative and quantitative research methods to:*
 - a. *Present novice accounting education researchers with some guidelines on the philosophies and intricacies of the science of research methodology so as to equip them with a point of reference for doing research and interpreting results, specifically in the social sciences (refer to chapter 2, page 26);*
 - b. *Highlight some best practices in conducting research which are also applicable to accounting education in general (refer to chapter 2, page 26); and*
 - c. *Identify the research methodology to be applied in this study (refer to chapter 7, page 248).*

In addressing this research objective, the author attempted to partially fill the gap between researchers and practitioners in accounting education and research, as discussed earlier (paragraph 1.2, page 11), and provide a motivation for the research methodologies applied in this study, as discussed in chapter 7 (paragraph 7.2, page 249). In performing this study the author endeavoured to contribute to the science of research in accounting education in general by simplifying the paradigmatic issues found in the field of accounting education today. This research will further present a guideline for the novice researcher in the field of accounting education with regard to selecting a paradigm and methodology when investigating phenomena affecting students. The reader of this chapter will, therefore, gain a deeper understanding of how the choice of methodology can affect the outcome of a study. The examples that will be provided should assist the novice accounting education researcher to apply the principles highlighted and discussed. The novice accounting education researcher should, therefore, be able to use the findings and recommendations made as a point of reference when commencing the journey of closing the gap between researchers and practitioners in accounting education and research.

- ii. *An analysis of the audit lecturer and audit classroom as variables effecting change in the field of auditing at higher education institutions, not just in South Africa, but also internationally (refer to chapter 3, page 55).*

As noted in the introduction (paragraph 1.1.1, page 4), lecturers are seen as the most important variable in the audit teaching-learning environment because they have control over the majority of the other variables such as the teaching methodology applied in the audit classroom and other more general variables that affect the audit students' learning process.

Thus, it is deemed appropriate to investigate the audit lecturer if an attempt is to be made to change the teaching approach followed in auditing at higher education institutions.

- iii. *Exploring and understanding the audit student as a variable in the audit teaching-learning environment effecting change in audit education (refer to chapter 4, page 110).*

Understanding and exploring the learning approaches, the biographical factors, student perceptions of the teaching-learning environment and barriers toward students' achievement in accounting education in general, will contribute significantly to identifying the factors that affect the students' performance in the audit subject. Furthermore, the author deemed this investigation essential for incorporating the findings into the development of the audit simulation, discussed later in this chapter (paragraph 1.7.3, page 20).

- iv. *An investigation of the required content of the audit curriculum to identify the technical knowledge and skills needed to be perceived competent in the field of auditing (refer to chapter 5, page 138).*

The curriculum content, as a variable in the audit teaching-learning environment, must be investigated, because it represents the knowledge and skills that audit students should be equipped with in order to successfully apply themselves in audit practice. It is further imperative to consider the composition of audit curriculum so as to develop an audit simulation which incorporates relevant curriculum content (paragraph 1.7.3, page 20).

- v. *Establishing a framework for simulation design (refer to chapter 6, page 174).*

When developing or designing a new audit simulation, the aspects that would encapsulate and address the findings of secondary research objective 2 to 4 must be taken into account. Without a properly designed simulation that addresses the issues in audit education **today**, no real change can take place. All the variables in the audit teaching-learning environment will be considered so as to establish a framework that could also assist future developers of simulations in auditing and other accountancy pedagogies.

- vi. *Developing an audit simulation project and supporting substance to:*
 - a. *Assist audit students in gaining understanding of auditing theory and overcoming barriers in their learning process (refer to chapter 6, page 174); and*

- b. Assist the audit lecturer in applying a teaching methodology that incorporates the content requirements of the audit subject and that would replicate audit practice to create a milieu that will enable audit students to set themselves in a real audit environment (refer to chapter 6, page 174).*

The development of an audit simulation which encapsulates all the variables in the audit teaching-learning environment and which can be implemented by higher education institutions in South Africa and globally will contribute to audit education in general by addressing the issues identified in the problem statement (paragraph 1.3, page 15). Thus, the audit simulation can become an instrument to foster change to the current approach to audit education.

- vii. Evaluating whether a newly developed audit simulation would assist in enhancing the audit students' perceived broad competence (refer to chapter 7, page 248).*

An evaluation is needed of whether a newly developed audit simulation would assist in enhancing the audit students' perceived broad competence, first, to reach a conclusion on whether this simulation would address all the variables in the audit teaching-learning environment and, secondly, to establish whether the students perceive their broad competence to have improved due to their participation in the simulation. In so doing, the hypothesis (paragraph 1.4, page 15) will be tested and concluded on, and recommendations will be made based on the findings.

- viii. Making recommendations on how to start answering the call to bring change to the audit classroom (refer to chapter 8, page 327).*

1.6 Scope of the study

As discussed in the introduction (paragraph 1.1.3, page 7), South African universities and other higher education institutions have to develop their audit curriculum to meet the required competencies set by SAICA (2010:6) in their competency framework. Auditing and assurance, as well as pervasive and generic skills, such as ethics and professionalism, personal attributes and professional skills, are all part of this framework and can be incorporated into the audit education spectrum. This study, therefore, focuses on auditing and assurance, together with the pervasive and generic skills, studied by third-year students at universities or other higher education institutions in South Africa.

Owing to the fact that the World Economic Forum's Global Competitiveness Report for the years 2013-2014 ranks the strength of South Africa's auditing and reporting standards –

which are applied internationally – as being number one in the world (WEF, 2013), the findings of this study should be internationally valuable and contribute to the broader accounting and auditing profession outside South Africa.

1.7 Research design and method

To achieve the secondary research objectives and, ultimately, the overall primary research objective (paragraph 1.5, page 15), a thorough literature review and **two** empirical studies were conducted.

The overall research design and method followed in this study are discussed next:

1.7.1 Literature review

The literature review was based on both nationally and internationally published academic and research literature, as well as on referenced works, conference proceedings, paper and electronic media and published books. This was performed to develop the theoretical foundation on which the study was based and to set out the framework for developing the simulation project.

The literature review aimed to achieve the following:

- Setting the context in which the study is based (chapter 1);
- Exploring the research methodology(s) applicable to accounting education research based on an explorative study into some philosophical paradigms and other underpinnings of the qualitative and quantitative research methods to:
 - Present novice accounting education researchers with some guidelines on the philosophies and intricacies of the science of research methodology so as to equip them with a point of reference when doing research and interpreting results, specifically in the social sciences [chapter 2, secondary research objective i (a)];
 - Highlight some best practices in conducting research that are also applicable to accounting education in general [chapter 2, secondary research objective i (b)]; and
 - Identify the research methodology to be applied in this study [chapter 7, secondary research objective i (c)].

- Investigating the audit lecturer and audit classroom as variables effecting change in the field of auditing at higher education institutions, not just in South Africa, but also internationally [chapter 3, secondary research objective ii];
- Understanding the audit student as a variable in the audit teaching-learning environment that affects change in audit education [chapter 4, secondary research objective iii];
- Identifying the required content of the audit curriculum to determine which technical knowledge and skills are needed to be perceived competent in the field of auditing [chapter 5, secondary research objective iv];
- Establishing a framework for simulation design that encapsulates all the variables in the audit teaching-learning environment. This includes determining why the use of a simulation project is beneficial and investigating the results of using simulations performed in other studies [chapter 6, secondary research objective v].

1.7.2 Empirical research

In gathering the data for the empirical component of the research objectives, a mixed methodology (quantitative and qualitative) was applied. Pre-test and post-test questionnaires were administered to audit students at two SAICA-accredited universities in South Africa (University X and University Y) as part of a quasi-experimental design. This was followed by focus group discussions with the audit students at University X so as to inform the quantitative findings. In this way, the researcher could evaluate whether a newly developed audit simulation would, in fact, assist in enhancing the audit students' perceived broad competence [chapter 7, secondary research objectives vii].

Chapter 7 (page 248) provides a detailed exposition of the key elements of the research methodology that was followed to achieve the secondary research objective, which required empirical research.

1.7.3 Developing and evaluating a new audit simulation

In the process of reaching the overarching objective of this study (paragraph 1.5, page 15), an audit simulation and supporting substance, which incorporate all the variables in the audit teaching-learning environment, were designed based on the framework for simulation design that was established by the author (**see annexure M, page 488**). The newly developed simulation was then applied. This new simulation was developed for implementation by higher education institutions, in South Africa and globally, in an attempt to bring change to

the current approach to audit education. In addition to the overarching objective of this study, the new simulation was evaluated to determine whether it would:

- Assist audit students in gaining understanding of auditing theory and overcoming barriers in their learning process [chapter 7, secondary research objective vi (a)]; and
- Assist the audit lecturer in applying a teaching methodology that would replicate audit practice and, in turn, create a milieu that will enable the audit student to set themselves in a real audit environment [chapter 7, secondary research objective vi (b)].

The new audit simulation was incorporated into the Auditing 3 course for students enrolled for the CA programme at University X, as noted earlier (paragraph 1.7.2, page 20).

1.8 Chapter layout

This thesis consists of eight chapters describing the process in which the overall primary research objective of this study was addressed and reached. The discussion that follows provides an overview of each chapter, including a discussion on how the secondary research objectives were addressed in each chapter.

Chapter 1: Introduction, purpose and scope of the study

The first chapter provides the introduction and background of the study. The variables affecting audit teaching and learning, and which ultimately form the audit teaching-learning environment, are identified. The problem statement is formulated, with a motivation as to why research in this field is necessary. The hypothesis is stated subsequently. The primary research objective and the secondary research objectives are formulated and motivated, based on the findings of the numerous empirical studies investigated in the literature review (refer to chapters 3 to 7). This chapter concludes with a summary on the findings of the chapter.

Chapter 2: Philosophical research paradigms and research methodologies: Guidelines and best practices for the novice accounting education researcher

Chapter 2 starts by introducing accounting and audit educational research in general. The framing of research questions is considered, as well as the alignment between research objectives, research questions, philosophical paradigms, methods of data collection, together with considerations in applying a mixed method design. Possible limitations are

discussed, as are the recommendations of how the robustness of accounting, but more specifically audit research, can be improved.

Chapter 2 addresses the first secondary research objective (paragraph 1.5, page 15) and sets the tone for the discussion of the research methodology in chapter 7 (page 248). In chapter 2, novice accounting education researchers are presented with some guidelines on the philosophies and intricacies of the science of research methodology so as to equip them with a point of reference from which to conduct research and interpret results, specifically in the social sciences. This chapter highlights some best practices in conducting research, which are applicable to accounting education in general. Finally, recommendations based on the findings of the literature review are made on the way forward for the novice accounting education researcher. A conclusion on the findings of the literature review is provided to end the chapter.

Chapter 3: The audit teaching-learning environment: The audit lecturer and the classroom

The objective of chapter 3 is to analyse the audit lecturer and the audit classroom environment as variables that can effect change in the field of auditing at universities or higher education institutions, not just in South Africa, but also internationally. This addresses the second secondary research objective (paragraph 1.5, page 15).

Chapter 3 introduces the lecturer as the most important variable in the audit teaching-learning environment. The audit lecturer is defined by focusing on the general characteristics of lecturers and how these are or should be applied by lecturers so as to bring change to audit education. Then an in-depth comparison is drawn between the teaching methodologies used in auditing at higher education level today, followed by a discussion on how assessment and feedback approaches will assist in bringing change to audit education. The importance of setting the audit classroom as an environment that imitates audit practice is explicated also.

The chapter concludes with a summary of the audit lecturer as the most important variable in the audit teaching-learning environment to consider when attempting to change audit education.

Chapter 4: The audit teaching-learning environment: The audit student

Chapter 4 begins with an introduction to students who study auditing as part of their accounting studies at higher education institutions. This is followed by defining these students in general and exploring the variables affecting them in their learning process. These variables include learning approaches, student perceptions of the audit teaching-learning environment, learning outcomes, biographical factors and other student-specific barriers or phenomena affecting the student. The impact of these variables on the audit student specifically is discussed then. This chapter addresses the third secondary research objective (paragraph 1.5, page 15). To conclude, reflecting thoughts are provided on how the audit student, with all the variables affecting the learning process, forms part of the audit teaching-learning environment as a critical factor for the transformation in audit instruction.

Chapter 5: The audit teaching-learning environment: The subject content

The challenges and recent changes to audit education curricula are discussed as introduction to chapter 5. This chapter addresses the fourth secondary research objective (paragraph 1.5, page 15). In order to do so, a detailed discussion is provided of the skills and competencies required by SAICA for a student to be perceived as competent in the field of auditing and assurance and which are integrated into the audit curriculum. Generic and pervasive skills required as part of the SAICA competency framework are also explicated. Chapter 5 concludes with a summary of the required content of the audit curriculum and the effect it has on the renovation of a teaching approach in the audit classroom.

Chapter 6: Development of the simulation and supporting material

The introduction to this chapter lays another platform for the call for the study to be performed. This chapter emphasises the general motivations for and criticisms against using simulations as instruments to teach auditing at universities or other higher education institutions. A discussion is provided of the previous use of simulations in audit education, why they are beneficial to the audit teaching-learning environment, as well as the results of using simulations performed in other studies. The general factors pertinent to simulation design are described, as well as how the author developed the new audit simulation as an instrument to contribute to bringing change to the current approach to audit education. Emphasis is placed on how the development was based on the framework that was established for simulation design.

This chapter concludes by showing how the fifth and sixth secondary research objectives (paragraph 1.5, page 15) were reached by means of the audit simulation project in this

study. Specific attention is paid to the fact that the audit simulation assisted i) the audit students in gaining understanding of auditing theory and overcoming barriers in their learning process, and ii) the audit lecturer in applying a teaching methodology that replicated audit practice and, in so doing, created a milieu that will enable the audit students to set themselves in a real audit environment in future.

Chapter 7: The applied research methodology and the research results

This chapter starts by reflecting on what has been covered in the previous chapters and goes on to answer the research questions. A discussion is provided on how the seventh secondary research objective (paragraph 1.5, page 15) was addressed by empirical means:

- Evaluate whether a newly developed audit simulation would assist in enhancing the audit students' perceived broad competence.

This discussion includes the purpose of the study, the philosophical research paradigm and methodology, the data collection techniques, and the definition of the population and the sample, followed by how the validity and reliability of the data were ensured. The ethical considerations in performing research and how they were applied in this study are also explained. The results of the empirical findings are then analysed and discussed, after which the chapter is summarised.

Chapter 8: Reflections, conclusions and recommendations

The study concludes with chapter 8 which summarises all the aspects of the research performed and documented in this thesis. It highlights the main points of the literature review, which formed the basis of the study, and revisits both the primary and the secondary research objectives. This is followed by a discussion of how these secondary research objectives, as noted in chapter 1 (paragraph 1.5, page 15), were achieved. This includes a summary of the results and conclusions drawn on each secondary research objective throughout this thesis. Proving the hypothesis follows next.

Recommendations are made based on the results of the empirical study and the subsequent conclusions. These recommendations refer to how the call to bring change to the audit classroom can start to be answered, which addresses the eighth and final secondary research objective (paragraph 1.5, page 15). Next, it is shown how the overall primary research objective of the study was achieved. An explication is given of the contributions of this study to the audit subject, to audit education and to the audit teaching-learning environment in South Africa and globally. Finally, the limitations of the study, how they were

addressed, and areas for further research and development are discussed. The thesis concludes with some final remarks for audit educationalists in South Africa and abroad.

1.9 Chapter summary

From first-hand experience, the author knows that gaining insight into the audit subject comes with great difficulty for an audit student at a university or other higher education institution. The introduction to this study noted this issue and ascribed it to the *current approach* followed in audit education. An argument motivated by the literature was put forward regarding the call for change to this approach. Specific reference was made to the variety of variables that have an effect on transforming and bringing change to the audit classroom. These variables include the *audit lecturer*, the *physical audit classroom environment*, the *audit student* and the required *subject content* of the audit teaching-learning environment. The importance of considering these variables and their place in the audit teaching-learning environment was illustrated.

Previous research in this field and the motivation for the study were stated, after which the problem statement and the hypothesis were formulated. In an attempt to address the problems identified, a number of secondary research objectives were set. The scope of the study and its international value were also considered. A summary of the research methodology applied in this study was provided then. This included the approach followed in addressing the secondary research objectives by means of a literature review and an empirical study. The chapter layout of the thesis then followed.

In summary, the literature in South African audit education has delivered few published and peer-reviewed articles when compared to other fields in accounting education. This has resulted in a shortage of audit education research in a country that desperately needs highly skilled auditors due to current financial scandals, among other things (see paragraph 5.4.1, page 159). The late former South African president, Mr Nelson Mandela, stressed the importance of education in general by stating that “[e]ducation is the most powerful weapon which you can use to change the world” (Mandela, 2014). Taking into account these wise and encouraging words, it is imperative that the shortfall in audit education research in South Africa, together with the call for a change in audit education, be researched thoroughly. The purpose would not only be to address the research problems identified in this study specifically, but also to further audit education in the broader sense and, in doing so, strengthen the weapon of education that audit students can and should apply to change the world when entering practice after graduation.

Chapter 2

Philosophical research paradigms and research methodologies: Guidelines and best practices for the novice accounting education researcher

“Research is to see what everybody else has seen, and to think what nobody else has thought.” – Albert Szent Gyorgyi

2.1 Introduction

Accounting education, in the broader sense of accounting and educational research, is defined by Van der Merwe (2013:45) as research, performed mainly with an academic objective in mind, of which the findings should add to the growth of the accounting sector, whether in education or society as a whole. Fouché (2013:137) noted that the present content of accounting education has remained markedly the same over the last half decade, and is now largely insufficient for the accounting student entering the professional accounting field. Research in this field should, therefore, receive the attention it demands currently.

As discussed in chapter 1 (paragraph 1.2, page 11), Elliot (2010:1) and Fouché (2013:137) noted that a gap exists between researchers and practitioners in accounting education and research, because research seems too technical for practitioners to understand and too many of the research objectives seem irrelevant to the problems experienced in practice. In an attempt to partially fill this gap, this chapter has three objectives addressing the first secondary research objective as noted in chapter one (paragraph 1.5, page 15). The first is to present the novice accounting education researcher with some guidelines on the philosophies and intricacies of the science of research methodology so as to equip them with a point of reference when doing research and interpreting results, specifically in the social sciences. Secondly, this chapter aims to highlight some best practices in conducting research that are also applicable to accounting education in general. Finally, this chapter serves as the literature review for identifying the research methodologies to be applied in this study (paragraph 7.2, page 249).

McKerchar (2008:6) points to various philosophical research paradigms, which form the foundation of any research project, and methods of collecting data that a good researcher should be able to understand. In order to develop a philosophical perspective, Burrell and Morgan (1979:1-20) recommend that researchers make assumptions regarding two dimensions, namely i) the nature of society and ii) the nature of science. Although Burrell and Morgan (1979:1-20) developed a comprehensive philosophical framework based on these assumptions, the essence of this chapter is the nature of the social sciences, which include accounting education.

In an attempt to define the term “philosophy”, Singh (2006:122) states that we might gain understanding if we define what philosophy is not:

“Philosophy is not a speculative discipline in the sense that it begins with gratuitous assumptions about man or the universe. It is not religion, although the philosopher may be deeply concerned about the nature of God or the possibility of immortality of man. It is not a way of life, in the sense in which we sometimes refer to a person’s “philosophy of life”. It is not the poetic appreciation of a beautiful sunrise. Philosophy is a disciplined, orderly, logical study of the universe, thus literally everything that constitutes reality”.

Siti (2010:18) adds that philosophy involves thinking about assumptions as to how one observes the social world, because this will affect the choice of method according to which a researcher thinks about the research process. From these views and definitions, it is clear that the term “philosophy” is not a confined concept and should be considered in more detail, specifically in connection with its significance in designing, deducting and writing up of research in accounting education.

The philosophical paradigms of research that are traditionally considered to be applicable in the field of accounting education research will be discussed next. This is followed by a discussion on how these philosophies are applicable to accounting education research and research design. The methods of data collection in respect of qualitative and quantitative methodologies are discussed, followed by an investigation of the mixed-method approach. The chapter concludes with a summary of the key issues discussed, the value of the study, and recommendations on the way forward for the novice accounting education researcher.

2.2 Philosophical paradigms and research design in the social sciences

Researchers often start by considering whether their research methodology should be i) quantitative in nature, using numerical data obtained from a sample in a population (Maree, 2010:145); or ii) qualitative in nature, producing non-numeric, descriptive data (Brynard & Hanekom, 2010:37). There is, however, more to research than these two choices. In order to comprehend the philosophical underpinnings of qualitative “versus” quantitative research methodologies, the researcher needs thorough understanding of what a paradigm is.

Kuhn (1970:175) noted that a paradigm is a set framework that makes different assumptions about the social world, about how science should be concluded and about what constitutes legitimate problems, solutions and criteria of proof. Barker (2003:312) defines a paradigm as a model or pattern containing a set of legitimate assumptions and a design for collecting and interpreting data. Based on these definitions, the qualitative and quantitative research methodologies come to mind together with the fact that all research, whether of a qualitative or quantitative nature, is based on the underlying assumptions about what constitutes valid research.

Research in education and other fields can be conducted in a number of competing paradigms (Coll & Chapman, 2000:2), which are all grounded in their own ontological and epistemological assumptions. All assumptions are based on conjecture; therefore, the philosophical foundations of each paradigm can never be confirmed or disproven empirically (Delport *et al.*, 2013:7). Different paradigms naturally hold opposing ontological and epistemological outlooks, which means they have differing assumptions of reality (ontology) and knowledge (epistemology) that underpin their particular research method (Maree, 2012:55; Mouton, 2012:46). This is reflected in their methodology and methods. Grix (2002:179) identifies a directional and rational relationship between these main components of research. This researcher states that our ontological and epistemological thoughts assist us in formulating the research questions we ask and the methodology we will follow in addressing them (Grix, 2002:179).

In summary, ontology can be described as the researcher’s view of the world, whether from a realist perspective where an external reality exists objectively from the researcher, or from a relativist perspective where reality depends on various circumstances and factors. Ontology then translates into epistemology where the questions regarding how the researcher views knowledge are determined. This knowledge can either be based on the

experience of the senses which can be observed and obtained by experiments, or be seen as multi-layered and complex where a single phenomenon can be interpreted in several ways. The outcome of the epistemology decisions determines the research paradigm in which the researcher will conduct research. This is followed by the decision on how we can go about obtaining the required knowledge (methodology) and determining the method of data collection pertaining to a research paradigm.

McKerchar (2008:6), together with Roth and Mehta (2002:133), mention a robust number of research paradigms that are discussed, debated and argued in current literature pertaining to the social sciences. However, there are two main research paradigms that have come to the fore in existing literature, namely positivism and interpretivism. Other less distinct paradigms form a continuum between positivism and interpretivism, for example, critical realism, post-positivism, constructivism, feminism and post-modernism (Delport *et al.*, 2013:6-10; McKerchar, 2008:7). Although some of these paradigms can be applicable to accounting education research, the focus of this chapter is only on these two common paradigms and their relation to qualitative and quantitative research methods. Researchers choose methodologies according to their different ontological and epistemological positions towards the research question or phenomenon they are investigating (Scotland, 2012:10). Thus, the research paradigm selected by the researcher will depend on these ontological and epistemological components and will affect the methodology that is selected. It should also be noted that good researchers will be able to choose the correct research paradigm and methodology to suit their particular study. The correct fit between study and paradigm will become clear in the following discussion.

2.2.1 Investigation into the positivism paradigm

The positivist paradigm, as introduced by Auguste Comte, emerged in the 1920s and 1930s as a result of a discussion group of philosophers, mathematicians and scientists who investigated scientific language and methodology (Juma'h, 2006:89). Since then, the word “positivist”, like the word “bourgeois”, has been used derogatively and not to refer to an expressive paradigm that can clarify a particular type of assumption in the social sciences (Burrell & Morgan, 1979). Delport *et al.* (2013:6) stated that many writers have abused the term “positivism” by using it superficially and indiscriminately. In this chapter the term refers to an expressive paradigm to explain the ontological, epistemological and methodical components of research within the positivist paradigm.

The ontological component of positivism is one of realism or common sense (Hudson & Ozanne, 1988:510; Scotland, 2012:10). Greener (2008:16) states that the only phenomena

that positivists believe can produce knowledge are those which they can know through their senses, namely by sight, touch, smell, taste and hearing. McKerchar (2008:7) concurs by stating that the positivist attitude is based on a realistic foundationalism ontology which sights the world as existing independently of our knowledge of it, i.e. objective and apart from the researcher.

Epistemology, on the other hand, is described generally as the positivist entering the world independently, ascertaining absolute knowledge about an objective reality; thus, the researcher and what is being researched are independent. Walliman (2011:16) describes epistemology as the theory of knowledge, specifically in connection with its validation and methods used. This researcher further claims that this component of research is concerned with how we know things and what we regard as acceptable in a discipline (Walliman, 2011:16). The approach used in positivism to acquire this knowledge is one of empiricism which constitutes that observation and measurement are at the core of the scientific endeavor (Walliman, 2011:16). This approach entails deductive reasoning whereby the researcher's thoughts are structured, leading the researcher to identify spontaneous connections through observations and to draw reasonable conclusions about a phenomenon (McKerchar, 2008:7; Repko, 2012:113).

Deductive reasoning is usually informed by deductive logic, beginning with what is known about a phenomenon and then moving to the unknown, which leads researchers to develop a hypothesis (Loseke, 2013:19). Sarantakos (2005:760) and Walliman (2011:18) are of the opinion that deductive reasoning starts with a general statement and is used to suggest theories (i.e. hypotheses) that can be tested and be concluded on; thus, moving from the general to the particular (Brynard & Hanekom, 2010:16). An example of how the positivistic paradigm can be applied in the field of accounting education is as follows:

Example 2-1: A positivist approach to accounting education research

*All audit students with no practical experience will eventually struggle to master the robust volume of study material. (**General statement**)*

*This student is registered to study auditing with no practical experience. (**Contingency**)*

*Therefore, this student will eventually struggle to master the robust volume of study material. (**Conclusion**)*

(Source: Author; Brynard & Hanekom, 2010:16; Walliman, 2011:18 – adapted)

This example consists of a general statement followed by a more specific statement contingent from the first, and then a conclusion based on the logic of the two statements.

Quantitative research performed in the sciences relies on deductive reasoning and is empirical in nature (Sarantakos, 2005:5). Based on these assumptions and those made in the ontological and epistemological components of the positivist paradigm as noted earlier, the research methodology commonly used in this paradigm is quantitative in nature (Maree, 2012:55; Repko, 2012:129; Sulkowski, 2010:109). Although a quantitative approach is based on scientific and empirical methods of collecting and interpreting data on a specific phenomenon, it is not without limitations, specifically in the field of accounting education where the simplification and controlling of variables are tremendously challenging (Scotland, 2012:11).

In summary, positivism is about the discovery of truth and demonstrating this through empirical methods. Research performed in this paradigm is, therefore, objective and encompasses deductive reasoning which results in research that defines, clarifies and, in some designs, predicts the phenomena we experience. A researcher choosing this paradigm strives to apply a model typically associated with research in the natural sciences to investigate social phenomena and to obtain explanations of the social world.

The positivist, according to Bogdan and Taylor (1984:1), seeks the facts and causes of social phenomena apart from the subjective states (a variable) of individuals, making the use of quantitative research methods a bit more challenging for the accounting education researcher. These limitations have led to further developments towards paradigms that lend themselves to qualitative work, such as the interpretive paradigm, which is considered next (Depledge *et al.*, 2013:224).

2.2.2 Investigation into the interpretivism paradigm

Interpretivist researchers aim to see the world through the eyes of the participants, allowing them numerous viewpoints of reality and not only the one reality that a positivist researcher aims to achieve (Greener, 2008:17). Thus, the interpretivist researcher cannot be detached from the subject being studied. From an ontological perspective, interpretivists are not concerned with the objective reality that is “out there” but, instead, with knowing and investigating specific subjective realities that exist “in here” (Manroop, *et al.*, 2011:150). Smith (2006:196) and Geele (2010:499) concur by claiming that the ontological position of interpretivists are generally subjective or based on internal realism that sees reality as an intersubjective construction or a personal construction respectively; thus, making sense of

the world through continuously interpreting, creating, defining, justifying and rationalizing the daily actions of phenomena in the social sciences.

On the other hand, the epistemological position of interpretivism is one of subjectivism which is grounded in actual world phenomena. Although the world does not exist freely of our knowledge of it, it can be interpreted on an individual basis, but can never really be known (Repko, 2012:118). The interpretivist paradigm is one of realism and does not provide a hard and vast explanation from which spontaneous connections or predictions can be made (McKerchar, 2008:7; Walliman, 2011:17). That is, the interpretivist uses inductive reasoning, starting from specific observations that is repeated and then drawing a general conclusion based on these; thus, moving from the particular to the general (Brynard & Hanekom, 2010:16; Walliman, 2011:17). In an attempt to clarify the aforementioned in the context of the accounting education field, refer to example 2-2:

Example 2-2: An interpretivist approach to accounting education research

*Auditing student 1, with no practical experience, was observed struggling to master the robust volume of study material. (**Repeated observation**)*

*Auditing student 2, with no practical experience, was observed struggling to master the robust volume of study material. (**Repeated observation**)*

*Auditing student 3, with no practical experience, was observed struggling to master the robust volume of study material. (**Repeated observation**)*

*Therefore, I conclude that all audit students with no practical experience will struggle to master the robust volume of study material. (**Conclusion**)*

(Source: Author; Brynard & Hanekom, 2010:16; Walliman, 2011:18 – adapted)

This example and the assumptions of the ontological and epistemological components of the interpretivist paradigm point to a qualitative research methodology, because these are all characteristics associated with this type of methodology. When conducting research in a qualitative matter, the researcher intends to approach the world “out there” (not confined to settings such as laboratories) and to define, comprehend and clarify the social phenomena “from the inside” in a number of different ways (Bogdan & Taylor, 1984:5; Flick, 2008:ix).

In conclusion, by means of inductive reasoning the qualitative researcher can understand what is distinctly human and come to grips with understanding social society. They follow an approach that aims to understand people, their actions and methods of reasoning. The

researcher in this paradigm is exposed to observation of social behavior and is in direct contact with the participants for prolonged periods of time in an attempt to develop deep understanding of their behavior or to make sense of subtle nonverbal communication. Table 2-1 below summarizes the differences between the positivist and interpretivist paradigm in relation to their ontological, epistemological and methodological components.

Table 2-1: Positivism and interpretivism: Ontological, epistemological and methodological components

	<i>Positivist paradigm</i>	<i>Interpretivist paradigm</i>
<i>Ontology</i> (Nature of reality)	The world exists independently of our knowledge of it, i.e. an objective reality and apart from the researcher	The world does not exist independently of our knowledge of it, i.e. a subjective reality and not independent from the researcher
<i>Epistemology</i> (Relationship with researcher)	The researcher and what is being researched are independent from each other	The researcher and what is being researched interact
<i>Methodology</i> (Research process)	Deductive process that is quantitative in nature	Inductive process that is qualitative in nature

(Source: Brynard & Hanekom, 2010:16; Bogdan & Taylor, 1984:1-5; Burrell & Morgan, 1979:1-7; Depledge *et al.*, 2013:224; Delport *et al.*, 2013:5-9; Flick, 2008:ix; Greener, 2008:16-17; Hudson & Ozanne, 1988:510; Juma'h, 2006:89; Manroop *et al.*, 2011:150; Maree, 2012:55; McKerchar, 2008:7-9; Repko, 2012:113-129; Sarantakos, 2005:5; Scotland, 2012:10-11; Smith, 2006:196; Sulkowski, 2010:109)

The paragraphs (2.3 - 2.4) to follow deal with quantitative and qualitative research methodologies, as well as with their methods of data collection. Paragraph 2.5 (page 50) elaborates on the use and utility of mixed methods.

2.3 Quantitative research methodology

According to Maree (2010:145), quantitative research is a method of using numerical data obtained from a sample in a population in order to generalize the results to the field that is being explored. Adams *et al.* (2009:26) conclude that quantitative research contains characteristics of quantitative width, implying that statistical analysis would be performed.

Therefore, undertaking quantitative research can be defined as drawing a conclusion based upon evidence obtained from data (usually in numeric form) and statistical analysis by means of deductive reasoning. This whole process is, thus, empirical in nature. Following a quantitative research methodology as a research design includes the use of various methods of data collection, for example, experiments, surveys (questionnaires), statistical analysis and mathematical modeling (Hammersley, 2012; McKerchar, 2008:10; Repko, 2012:129). In order to perform a comprehensive investigation by employing quantitative measurement, the variables affecting the investigation need consideration because only they will allow researchers in the accounting education field to detect any changes in the results produced (Hammersley, 2012).

According to Repko (2012:358), and Brynard and Hanekom (2010:22), the researcher needs to consider the relevant independent and dependent variables in order to design a suitable data collection method, whether experimental or in the form of a survey (questionnaire). Independent and dependent variables have a cause-and-effect relationship, where the dependent variable is effected because of the introduction of the independent variable (Repko, 2012:358).

Brynard and Hanekom (2010:22-23) further state:

“The dependent variable varies with the introduction or removal (manipulation) of the independent variable. An independent variable is that factor which is deliberately varied, manipulated or selected by the researcher in order to determine the relationship to an observed phenomenon which constitutes the dependent variable”.

Returning to the examples posed in paragraph 2.2.1 (page 29) and paragraph 2.2.2 (page 31), the question is whether any variables can be identified in these problems. In these examples two variables apply: one is the practical experience of audit students, and the second is their ability to master the robust volume of study material. The independent variable in this case is the practical experience of working in public practice. This is the factor that is selected by the accounting education researcher (author) to determine the relationship to an observed phenomenon, namely the ability of audit students to master the robust volume of study material. The latter constitutes the dependent variable and varies with the introduction of the independent variable.

The introduction or removal of practical experience, namely the independent variable that is likely to cause the outcome under consideration, will have an effect on the ability (dependent

variable) of audit students to master the robust volumes of study material. This indicates the cause-and-effect relationship between the two variables.

An integral weakness of this methodology is the ability of the researcher to control the mediating variables, which McKerchar (2008:10) mentions. Mediating variables are those associated with the demographics such as age, race, gender and level of education of the participants, together with those that influence the participants' behavioural intentions such as emotions, according to Chung *et al.* (2013:455) and McKerchar (2008:11). These authors caution against confusing the mediating factors with the cause of a particular type of behavior which, in its own, is seen as an independent variable, for instance practical experience in the example posed previously.

Although researchers acknowledge the significance of variables, several limitations and constraints need to be considered in order to avoid bias. Owing to time and cost restraints – such as a phenomenon that is present only at a certain point in time, or the cost of studies involving global populations – it is usually very difficult to include the entire population in a study (Maree, 2012:172). In the field of accounting education, the population under scrutiny usually includes students. As stressed by Brynard and Hanekom (2010:10-11), when students are used as a population to investigate a certain phenomenon, all relevant levels of students should be included so as to prevent biased results.

The following paragraph discusses the use of surveys (questionnaires) as a quantitative research method in the field of accounting education. Although other quantitative methods, such as experiments, also apply to the accounting education field, they fall beyond the scope of this chapter, because the focus is on investigating phenomena pertaining to the social sciences, and experiments are usually associated with natural sciences.

2.3.1 Use of questionnaires as a quantitative method

Questionnaires in the field of accounting education have been used in various studies, such as those performed by Van der Merwe (2013:94), Fouché (2006:150) and Tonge and Willett (2012:171). These studies have proven this type of quantitative method to be a valuable tool in not only evaluating students' (respondents) views and perceptions, but also in collecting data about a phenomenon affecting students; thus, in investigating the cause-and-effect relationship of phenomena affecting students.

Questionnaires come in different forms, such as group-administered questionnaires, postal surveys, telephone surveys and direct-interview questionnaires, each with its own set of advantages and disadvantages (Abdel-Khalik & Ajinkya, 1979:45; Blair *et al.*, 2014:177;

Maree, 2012:156-158; Smith, 2011:116-117). Group-administrated questionnaires can cover many respondents in a short timeframe and is not cost intensive, whereas postal surveys are also relatively cheap to administer, but the response rates are typically very low (Maree, 2012:157; Smith, 2011:117). The cost of telephone surveys and interview questionnaires are frequently very high, but these methods rarely produce low response rates (Maree, 2012:157; Smith, 2011:117).

The question remains as to which type of survey will be most effective in the field of accounting education, specifically in the light of factors such as the sample population, its size, sampling rate, means of selection, sampling bias and response rates. Based on the assumption that accounting education researchers have adequate opportunities to administer the questionnaire to the respondents (students, i.e. sample population), it is clear that group-administered questionnaires would be the most effective tool (with reference to cost and time) in the given circumstance due to the following:

- The sample population is easy to identify based on the phenomena that are being investigated;
- The sampling rate limitations would be addressed, because the whole population affected by the phenomena under investigation would be considered;
- Means of selection would be based on the phenomena under study;
- Sampling bias is restricted; and
- Response rates would be extremely good.

Despite these advantages, surveys are often criticised as being the “poor man’s experiment” due to its internal control weakness of not being able to assign subjects randomly to treatments, the resulting inability to exclude competing hypotheses, and the presumption that all respondents’ interpretation of the questions are standardized (McKerchar, 2008:12; Smith, 2011:116). These possible limitations or weaknesses in the design of the questionnaire stress the significance of using a properly designed questionnaire and its effect on the validity and reliability of the data obtained from respondents. Researchers must approach the task of constructing a questionnaire not as an isolated effort, but as one informed by the research objectives (Blair *et al.*, 2014:177). In doing so, the structure, purpose, validity and reliability of the questionnaire design needs consideration.

McKerchar (2008:12) identified two different structures of questionnaire design that are applicable to the quantitative research methodology. The first is the structured questionnaire,

followed by the semi-structured questionnaire. Both these types can be administered to obtain empirical data which are based on closed-ended questions, and non-empirical data which are based on open-ended questions (Maree, 2012:160-162; McKerchar, 2008:12). The latter is viewed as a respected instrument in making generalizations to the broader population and testing hypotheses (Maree, 2012:160-162; McKerchar, 2008:12). Structured questionnaires will, therefore, consist of closed-ended questions, whereas semi-structured questionnaires contain both open- and closed-ended questions. Example 2-3 and Example 2-4 below illustrate the use of open- and closed-ended questions in the field of accounting education.

Example 2-3: Closed-ended questions

Please answer the following questions with regard to pre-engagement activities in the audit process by using the following scale:

1. *Not at all*
2. *Very little*
3. *Somewhat*
4. *Quite a bit*
5. *To a great extent*

The manner in which auditing was taught (the teaching methodology) up to now effectively assisted me in understanding:

Q1 - The audit process as a whole.

Q2 - The various types of assurance services that are available.

Q3 - The various types of other services (non-assurance) that are available.

(Source: Author)

Example 2-4: Open-ended questions

Please list the reasons you believe students in general struggle to master the robust volume of study material included in the audit subject.

(Source: Author)

The two factors of validity and reliability are fundamental to the structuring of questionnaires (Delpont *et al.*, 2013:171). Because the results are based on statistical evaluation, proper balance should be established between the validity and reliability of the questionnaire administered to obtain data (Abdel-Khalik & Ajinkya, 1979:45-46; Maree, 2012:160-162; McKerchar, 2008:12).

In order to produce valid results, the questionnaire should measure the phenomenon in question accurately (Delpont *et al.*, 2013:173). According to Brynard and Hanekom (2010:47-48), validity refers to the “what” of data collection, whereas Henning (2013:140-149) defines validity as a measure of whether the researcher is investigating what he or she intends to investigate. The validity of a questionnaire will, therefore, depend on whether it does what it intends to do, i.e. obtain the required information about the phenomenon under investigation.

On the other hand, the reliability of a questionnaire will depend on whether the questionnaire, if measuring the same phenomenon more than once, would render the same outcomes (Delpont *et al.*, 2013:177). Reliability, therefore, relates to the accuracy and consistency of the questionnaire design, together with the uniformity and precision of the questions included in the instrument (Bryman & Bell, 2007:162; Brynard & Hanekom, 2010:48). A questionnaire is deemed reliable if it produces the same results when administered more than once to one or many populations affected by the same phenomenon.

In an attempt to mitigate these design threats to validity and reliability, the researcher can implement several techniques or procedures. In respect of validity, piloting of the questionnaire can be useful in addressing any misinterpretations of words and the meaning of questions (McKerchar, 2008:12; Smith, 2011:121; Van der Merwe, 2013:94). Blair *et al.* (2014:205) compiled a simple guide to minimise the risks of misinterpretations in questions and words included in a questionnaire, for instance:

- Specify who, what, when, where and how;
- Specify how the answer should be given;
- Use simple language;
- Try to use words with only one meaning;
- Use numbers (instead of indefinite adjectives) to measure magnitudes; and
- Ask only one question at a time.

The most common measure to mitigate the risks affecting the reliability of questionnaire data is referred to as Cronbach's alpha coefficient (Delpont *et al.*, 2013:177; Peterson, 1994:382). This is a statistical measure where the alpha coefficient ranges between 0 and 1, with questionnaire alpha coefficients closer to 1 representing higher reliability. Peterson (1994:382) states that Cronbach's alpha coefficient is not only the most widely used estimator of reliability, but has, over the last twenty years, received substantial attention from those involved in methodological matters.

That said, although numerous statistical packages such as IBM SPSS (SPSS, 2011) are available on the market and can be utilized in the social sciences to calculate this trusted reliability measure, Delpont *et al.* (2013:177) stress the use of other procedures such as using two or more questions in a questionnaire to measure each aspect of a variable, eliminating items that are unclear and could result in different responses at different times, and standardizing the conditions under which the questionnaire is administered.

In summary, there are clearly many factors of which the researcher in the accounting education field needs to take note of before employing questionnaires as research method in collecting data about a phenomenon affecting the population (students). By paying specific attention to details in the development of a questionnaire and considering its suitability in the given circumstances, this type of instrument is and can continue to be appropriate in the exploration of phenomena affecting accounting students.

2.4 Qualitative research methodology

In recent years, qualitative research has experienced unparalleled growth and change as it became a recognized and valued research approach across a variety of disciplines, such as anthropology, sociology and education (Damico & Tetnowski, 2001:21-22; Flick, 2008:1; McKerchar, 2008:13). The term "qualitative method" has been described by Bogdan and Taylor (1984:5) as research that produces descriptive data, which consist of people's own spoken and transcribed words and observable behavior. Brynard and Hanekom (2010:37) add that qualitative research does not usually include any numeric specifications or models. Maree (2012:50) describes qualitative research as research that attempts to collect rich descriptive data in respect of a specific phenomenon with the aim to gain understanding of what is being observed or studied and not necessarily to proof a hypothesis. The qualitative research methodology can, therefore, be described as research that yields evocative data which are obtained by the researcher's experiences and perceptions that were put in writing.

The label “qualitative research methodology” has, due to its development over time, been used to encapsulate a number of theoretical frameworks (Flick, 2008:2; Shank, 2006:4). Ravitch and Riggan (2012:6) define “theoretical framework” as a way of linking all the elements of the research process, i.e. a specific research design within the qualitative research methodology. Shank (2006:4) conceptualised the term as being a condition of data gathering and interpretation, whereas McKerchar (2008:14) mentions explicitly that it refers the theoretical tradition of the methodological criteria used. Based on these distinct interpretations, a theoretical framework can be described as the backbone of the research design and a point of departure when conducting qualitative research into specific phenomena.

Theoretical frameworks in qualitative research include grounded theory, phenomenology, case study, narrative biography and ethnography (Delpont *et al.*, 2013:303; Flick, 2008:2; McKerchar, 2008:14). Experienced researchers and students who use qualitative research methods typically struggle to recognise and use theoretical frameworks in their research (Anfara & Mertz, 2006:7). In an attempt to put these frameworks into perspective for the novice accounting education researcher, paragraph 2.4.1 (page 40) to paragraph 2.4.5 (page 42) that follows, elaborate on each of the mentioned frameworks, with accompanying illustrations in the research area of accounting education.

2.4.1 Grounded theory

Grounded theory was developed in 1967 as an alternative approach within the positivist paradigm with its preference for quantitative methods of obtaining and analyzing data. However, since then, variations of this theory have been developed, such as the commonly referenced theory of Strauss and Corbin developed in 1990, now frequently used in qualitative research in the field of accounting and other social sciences (Maree, 2012:77; Smith, 2011:141). Strauss and Corbin (1998:12) are of the opinion that, given the way it is constructed, grounded theory is a suitable tool to offer insight, to deepen understanding of data, and to guide action.

By using grounded theory as research design, the researcher attempts to formulate a common but intangible theory of a process, action or interaction that is “grounded” in the opinions of the participants in the research (Delpont *et al.*, 2013:318; Maree, 2012:77; McKerchar, 2008:15). Grounded theory, in general, is based on two principles, the first being constant comparison, followed by theoretical sampling of different groups to maximize the similarities and differences in data (Delpont *et al.*, 2013:318; Maree, 2012:77; McKerchar, 2008:15; Smith, 2011:141). Grounded theory can, therefore, be defined as theory analysis,

where theory develops during data analysis and is then tested continuously against additional qualitatively sampled empirical data so as to refine the theory about a specific phenomenon.

In the field of accounting education, Hamid *et al.* (2012:662) performed a study based on the principles of grounded theory. This study aimed to investigate, by means of face-to-face interviews, observations and online interviews, the outcome of Activity Based Costing (ABC) training in order to form a theory on the transfer of training. The conclusions drawn in this study indicated that, although some methodological problems were experienced in the attempt to adopt grounded theory as a research methodology, it still proved appropriate for use in the field of accounting education research.

2.4.2 Phenomenology

Phenomenology is a philosophy, an approach and a method (Lin, 2013:470). In the broader sense, phenomenology is a fairly simple notion (Shank, 2006:131), with the emphasis on attaining understanding of a phenomenon through the perception of the participants who are exposed to the phenomenon (Delpont *et al.*, 2013:316; McKerchar, 2008:15). In this case, the researcher is interested in how people interpret their worlds and how we can interpret their interpretations in turn (Shank, 2006:132). McKerchar (2008:15) and Lin (2013:469) summarised these views by stating that phenomenology seeks to identify the essence of human experiences regarding a specific phenomenon, as interpreted by the participants in a study. That is, phenomenology is a research design where participants' views are obtained regarding a specific phenomenon, which are then interpreted by the researcher.

The data collection methods used in the field of phenomenology usually include focus groups, structured and semi-structured interviews, as well as case studies (McKerchar, 2008:15; Shank, 2006:132). Some of these methods have been used effectively in the field of accounting education in recent years. A study performed by Lucas (2012:183), analyzing lecturers' conceptions of teaching introductory accounting, applied a phenomenological research design in a qualitative research methodology. The results indicate the need for further research. The study also provides a conceptual framework through which lecturers might reflect upon the manner in which introductory accounting is, and can be taught. Thus, phenomenology can be a useful research design in the field of accounting education.

2.4.3 Case study

A case study is a common approach in the social sciences and education (Rule & John, 2011:4). Multiple definitions and interpretations of this research method can be found in the literature and, based on the underlying philosophical assumptions of the researcher, case study research can be applied in both the interpretivist and positivist research paradigms (Maree, 2012:75). McKerchar (2008:14) views a case study as a framework that explores a programme, event, or one or more individuals. Delport *et al.* (2013:321) point out that a case study is an exploration and description of a case that is occurring through a variety of data collection techniques such as interviews, documents, simulations and observations. Thus, a case study is a research methodology that investigates a phenomenon within its real-life context by means of different data collection techniques.

Rule and John (2011:8), together with Delport *et al.* (2013:321), identify two distinct types of case studies, namely the descriptive and the instrumental case study. The descriptive case study, also referred to as the intrinsic case study, aims to describe, analyse and interpret a specific phenomenon (Delport *et al.*, 2013:321), whereas an instrumental case study, commonly used for explanatory purposes, aims to build and test theory (Rule & John, 2011:8).

2.4.4 Narrative biography

McKerchar (2008:14) describes narrative biography as a theoretical framework where the lives of individuals are under scrutiny and data are collected usually in the form of interviews or by means of a written account. Delport *et al.* (2013:313) add that the “life world” of a person can best be understood from his or her own account or perspective. Narrative biography, therefore, focuses on the life experience and interpretations of individuals themselves. A possible study in this regard could pertain to the effect of personal issues, such as finances and religion, on the ethical foundation of accounting educators and students.

2.4.5 Ethnography

Ethnography is commonly associated with anthropology. The term has its origin from the Greek words, *ethnos* (people) and *graphein* (to write) and, in its simplest form, denotes “writing about people” (Maree, 2012:76). McKerchar (2008:14) emphasizes that ethnography is the study of an intact group in their natural setting over time based on the assumption that all human behaviour is intentional and observable. Therefore, the research should aim to

understand the reasons behind individuals' actions (Flick, 2008:89; Maree, 2012:76). Methods of data collection in this type of design include case studies, interviews, focus groups and observations (Flick, 2008:93; Maree, 2012:77; McKerchar, 2008:14). An inherent limitation of this design is that the researcher, when using a case study, can become too attached to the participants, which could result in bias (Maree, 2012:77). This limitation, together with the fact that it focuses more on anthropology, makes the application of ethnography in the field of accounting education very rare.

The following paragraph shifts attention to interviews and focus groups as data collection method in the science of accounting education research.

2.4.6 Use of interviews and focus groups as qualitative methods

The interview as method of data collection is probably the most frequently used method in qualitative studies. Interviews can be described as a conversation between two or more individuals where the interviewer obtains data by asking questions to the participant(s) (Maree, 2012:87). Delport *et al.* (2013:342) labeled interviews as being an approach where the researcher obtains data and other information by means of interaction with an individual or group of individuals who is known to have or is expected to have the information that the researcher requires. An interview can, therefore, be viewed as a method of obtaining qualitative information by means of interaction with one or more participants exposed to the phenomenon under investigation.

Although interviews are very common and easy to use, the researcher should decide on what interview technique to use, because this will influence the quality of data obtained. Interviews can be conducted by means of three basic techniques, namely structured, semi-structured, and unstructured.

Structured interviews are deemed to be the most limiting in respect of obtaining quality information from the participants (Smith, 2011:127), because of closed-ended questions that inhibit probing, together with the fact that these questions are set in advance (as in the closed-ended questionnaire of the positivist paradigm) (Maree, 2012:87). These limitations do, however, have their advantages. Closed-ended questions restrict bias by ensuring consistency and they eliminate any interpretation errors that can occur due to the use of open-ended questions (Maree, 2012:87; McKerchar, 2008:16; Smith, 2011:127).

Semi-structured interviews, on the other hand, allow for probing and clarifying answers, which gives the interviewer the opportunity to investigate other issues that emerge during the interview (Delport *et al.*, 2013:351-352; Smith, 2011:127). Delport *et al.* (2013:352) noted

that semi-structured interviews are particularly appropriate in a situation where the phenomenon is controversial or personal to the participant(s). In contrast, the unstructured interview embarks on a series of themes to be discussed without predetermined questions that are, in some cases, very limiting (Smith, 2011:128). This interview technique takes the form of a conversation, with the aim of obtaining participants' views, beliefs, attitudes and ideas about the phenomenon under investigation, and allows for continuous dialogue (Delpont *et al.*, 2013:348; Maree, 2012:87).

In the light of the above, it is imperative that the interviewer be suitably skilled and able to build a relationship with the participants. McKerchar (2008:15-16) advocates the use of unstructured interviews by stressing that interviews should follow a theme list set up prior to the interview, allowing for the interview to be shaped according to the experiences of the participants. In this way, the interviewer can take notes and listen actively to what is said by the participants, as well as observe their behavior. The prime risk when using this technique is that the discussion can derail. It is, therefore, vital that the interviewer steer the conversation back on track to ensure that all the themes have been covered at the end of the interview (Smith, 2011:128).

Methods in documenting the interview include transcription, taking field notes and tape recording (Delpont *et al.*, 2013:359; McKerchar, 2008:16). It is important that all ethical issues, such as obtaining the participants' permission for tape recording, have been addressed prior to the interview, as this will have a direct effect on the openness of the participant towards the interviewer and the phenomenon under investigation. Various studies in the field of accounting education have been conducted by using interviews as a method of data collection, for example, Donmez *et al.* (2012:418) and McPhail *et al.* (2010:31). In both these studies, this method proved to be of great value in furthering the science of accounting education research.

The term "focus groups" should not be confused with interviews conducted with groups, although there are similarities between the two techniques.

In the words of Maree (2012: 90):

"Inexperienced researchers often confuse group interviews with a focus group. With a group interview, a group of participants are asked a set of structured or semi-structured questions without debating or arguing about the responses being generated. It is generally agreed that the distinguishing features of the focus group

are that the discussion is focused in a particular topic, where debate and even conflict is encouraged and that the group dynamics assist in data generation”.

Shank (2006:48) describes the focus group as an expansion of the interview that is frequently used in qualitative research. According to Delport *et al.* (2013:361), a focus group is a tolerant environment that encourages participants to share their perceptions, experiences, points of view and concerns. Thus, a focus group is a tool that generates an extra dimension where participants can express their views and experiences about the phenomenon under discussion more freely. However, focus groups pose the threat of participants' wandering of the topic, but the same prevention strategies as for the unstructured interview, as discussed on the previous page, should be applied by the researcher.

The techniques used for data collection are predominately the same in focus groups as for interviews and allow for rich data generation (Maree, 2012:9; McKerchar, 2008:17). In the qualitative methodology, the methods of data analysis and procedures to ensure the quality (validity and reliability) of qualitative data differ from those found in the quantitative methodology of data gathering and analysis. While the quantitative method tends to make generalizations that are proven statistically, the qualitative approach seeks to understand and explain phenomena instead of attempting to obtain a specific answer (McKerchar, 2008:17). This makes the generalisation of findings by means of qualitative analysis beyond the boundaries of the study more challenging.

In an attempt to reduce this limitation regarding the generalization of qualitative research results – and therefore increase the validity and reliability of the findings – prominent qualitative researchers such as Lincoln and Guba (1985:991) proposed alternative constructs to validity and reliability, namely *credibility*, *transferability*, *dependability* and *conformability* which they believe reflect the assumptions of the qualitative approach more accurately. Maree (2012:81) and Delport *et al.* (2013:419) also acknowledged the use of Lincoln and Guba's constructs as a reliable method in improving the validity and reliability of qualitative research findings.

Delport *et al.* (2013:419-422) elaborate on these constructs as follows:

Credibility. This is an alternate to internal validity in which the goal is to validate that the inquiry was conducted in such a manner as to ensure that the subject has been accurately identified and defined. This approach will contain, setting the parameters of the study, the population and the theoretical framework together with a report of

the difficulty of the variables and interactions that is so rooted in the data gathered that it cannot help but to be valid.

Transferability. Here the researcher asks whether the results of the research can be transferred from a specific situation or case to another, thus determining the external validity of the study conclusions.

Dependability. The researcher asks whether the research process is rational, well documented and audited. This is a substitute to reliability where the researcher attempts to account for changing conditions in the phenomenon selected for the study as well as changes in the design shaped by an increasingly sophisticated understanding of the setting.

Conformability. In this last construct the researcher needs to capture the traditional notion of objectivity. The researcher thus needs to deliver evidence that corroborates the findings and interpretations by means of auditing.

Although these constructs are appropriate means with which to defend the validity and reliability of information obtained through interviews or focus groups in the field of accounting education, other techniques do exist. Mouton (2012:156) identified *triangulation* as a tool to ensure the validity and reliability of qualitative findings. The key concept in this approach is to use different methods or multiple sources of data collection based on the assumption that various methods or sources can complement one another and, therefore, mitigate one another's weaknesses (Mouton, 2012:156). Alternatively, McKerchar (2008:17) supports the use of *cumulative* and *communicative validation*. Cumulative validation takes place when the findings of a study are corroborated with results and conclusions from similar findings in other studies of a parallel nature. McKerchar (2008:17) describes communicative validation as a process of including the participants in the study in the subsequent review of the data gathered.

Following the considerations with regard to validity and reliability of qualitative data, the analysis of qualitative data now deserves attention. Currently, there are many software packages like ATLAS.ti that serves as a powerful workbench for the qualitative analysis of large bodies of textual, graphical, audio and video data (Henning, 2013:126). Other more conventional approaches to analyzing textual data include open coding, axial coding and selective coding (Heath & Cowley, 2004:146).

Coding, in general, is the process of reading cautiously through the transcribed data and separating all the data into meaningful themes (Maree, 2012:105). Open coding is an

analytical technique to classify the themes in order to conceptualize the organization of data in general, whereas axial coding requires a more in-depth examination of the details within one theme (Delpont *et al.*, 2013:412; Heath & Cowley, 2004:146). Selective coding, on the other hand, is the procedure of selecting the core themes and methodically relating them to other themes by taking a bigger view again (McKerchar, 2008:16). It might be necessary to move between these three methods throughout the coding process in order to authenticate the relationships and develop and fine-tune themes (Delpont *et al.*, 2013:413; McKerchar, 2008:16).

Maree (2012:100-113) identified three phases in which data are analyzed:

- *Phase 1*: Orientation to the data;
- *Phase 2*: On the way – working the data; and
- *Phase 3*: Final composition of the analyzed textual data.

Although these phases seem simple, the analysis of qualitative data must fit the research design (theoretical framework) and method. Thus, an appropriate data analysis strategy needs to be implemented, taking into account the phases identified by Maree (2012:100-113). This is best illustrated by considering a number of diverse qualitative data analysis strategies, such as grounded theory analysis, content analysis, conversation analysis, discourse analysis and narrative (story) analysis (Henning, 2013:117-140; Maree, 2012:100-103). Table 2-2 on the next page illustrates how these three phases are implemented by the strategies for qualitative data analysis.

Table 2-2: Strategies for qualitative data analysis

Grounded theory analysis	<i>Description of analysis</i>	Emerging theories (themes) are grounded in the researched reality. The researcher makes a distinct effort to identify relationships between different themes, as well as explanations and clarifications of phenomena that might be in the data.
	<i>Phase 1</i>	Textual data are read and segmented for open coding.
	<i>Phase 2</i>	Texts are coded by means of axial coding and then divided into themes, working iteratively by comparing and contrasting themes. This is followed by selective coding to reach higher levels of abstraction.
	<i>Phase 3</i>	The researcher's understanding of the phenomenon is presented in grounded theories developed from the data analysis.
Content analysis	<i>Description of analysis</i>	This is an inductive and interactive approach with emphasis on identifying similarities and differences in texts that could corroborate or disconfirm a theory. Usually applied in analysis of books, brochures, written documents, transcripts, news reports and visual media. Also applied in analysis of open-ended questions on questionnaires, interviews or focus groups.
	<i>Phase 1</i>	Reading or studying the textual data to form an overview and to better comprehend the context of the data.
	<i>Phase 2</i>	Coding the segments of meaning, followed by categorizing the related codes into groups. Seek relationships between these categories to form thematic patterns. [Open and axial coding]
	<i>Phase 3</i>	Writing the final themes identified in the data analysis while presenting the pattern of the related themes. [Selective coding]

Table 2.2 Qualitative data analysis strategies (continued...)

Conversation analysis	<i>Description of analysis</i>	The researcher attempts to describe the order, structure and sequential patterns of a conversation. The conversation is studied through inspection of tape recordings and transcriptions made from such recordings and relies on the patterns, structures and language used in speech and written word.
	<i>Phase 1</i>	Sets of transcribed data are developed and notes on observations are made.
	<i>Phase 2</i>	The sequence of the conversations such as turn taking, overlap, simultaneous utterance, tone, pitch, intervals and other actions are marked as they are noted. [Open coding]
	<i>Phase 3</i>	The conversations are discussed, indicating how the data explicate the set patterns of the conversations and how this contributes to social structures. [Axial and selective coding]
Discourse analysis	<i>Description of analysis</i>	Where conversation analysis focuses on talking in conversations, discourse analysis focuses on the meaning of the spoken and written word, and the reasons why they have been uttered in that way. It is concerned with studying written texts and spoken words to reveal the discursive sources of power, inequality and bias, and how these sources are initiated, maintained and transformed within a specific social context.
	<i>Phase 1</i>	Texts are read, and coding of the socially constructed unit of meaning in written texts takes place. [Open coding]
	<i>Phase 2</i>	Relevant language markers in the text are identified and relationships with the rest of the text are sought. [Axial coding]
	<i>Phase 3</i>	The discursively marked themes are collated and discussed. The discourse is then interpreted, indicating how the discourse itself had an impact on the making of the text's content. [Selective coding]

Table 2.2 Qualitative data analysis strategies (continued...)

Narrative analysis	<i>Description of analysis</i>	Narrative analysis is seen as a specialized form of discourse analysis, because it searches for the way participants make sense of their lives by representing themselves in a story.
	<i>Phase 1</i>	The narrative structure may be in segments that will be analyzed. It may be in an entire interview or sets of interviews and focus groups.
	<i>Phase 2</i>	For narrative analysis the way in which the narrative is presented is analyzed, thus identifying the narrative discourse. [Open coding]
	<i>Phase 3</i>	The narrative structures are collated and discussed, showing how the style and structure of the narrative itself strengthened or weakened the meaning of the text. [Axial and selective coding]

(Source: Author's own interpretations; Henning, 2013:114-140; Maree, 2012:100-103)

Drawing conclusions that can be corroborated, does indeed require researchers to demonstrate methodological consistency (McKerchar, 2008:18). Basing qualitative findings on a proper research design (theoretical framework) and data analysis strategy, will mitigate the internal weaknesses of a qualitative methodology in investigating a specific phenomenon pertaining to accounting education. Some phenomena or topics, such as student failure, could be too sensitive for participants to freely participate in the group or even arrive at the group for the discussion, as was seen in the study done by Van der Merwe (2013:131). Nevertheless, focus groups and interviews continue to be valuable in the field of accounting education research and could be used as a single method of data collection or as a starting point for mixed methodologies and triangulation.

2.5 Mixed methodologies

The use of a mixed methodology, consisting of both quantitative and qualitative methods of collecting data, is on the increase in the field of accounting education; hence the numerous studies and literature available in this regard. Various studies, including those of Donmez *et al.* (2012:418) and McPhail *et al.* (2010:31) have successfully employed mixed methodologies in contributing to the science of accounting education. McKerchar (2008:20)

concurs by stating that, while each of the methodologies can be applied in its respective positivistic or interpretivist paradigms, there is increasing proof of researchers drawing from both of these paradigms as a method of data collection.

The incorporation of qualitative and quantitative methods is an exciting issue and continues to be one of much discussion due to the diverse epistemological and ontological assumptions (components) and paradigms related to these two methods (Aagaard *et al.*, 2014:106; Kidd *et al.*, 2011:370). Mengshoel (2012:373) defends mixed methodologies by claiming that researchers conducting mixed-method research can manage these paradigmatic issues by drawing from the strengths of both data collection methods to mitigate their individual weaknesses.

When investigating the ontological and epistemological components of mixed methodologies, the pragmatic paradigm comes to the fore. This paradigm allows for some amount of generalisation, usually associated with the positivist paradigm, and context consideration typically related to the interpretivist paradigm (Aagaard *et al.*, 2014:106). Mengshoel (2012:373) elaborates on the use of the pragmatic paradigm by stating that this paradigm is a material, objective reality, as well as a constructed mental and social reality. Therefore, this paradigm does not indicate which kind of research methodology should be applied by a researcher; hence everything is acceptable. Research in the pragmatic paradigm ultimately moves beyond quantitative versus qualitative arguments and admits the value of both paradigms in order to exploit the strengths and reduce the weaknesses of each (Aagaard *et al.*, 2014:106; McKerchar, 2008:2).

That said, the main challenge with mixed methodologies is the choice of data collection techniques to achieve a triangulation of results and, therefore, improving the validity of the research findings. Triangulation, as discussed previously, is the use of mixed methods in order to validate results so that they are varied from one another with respect to their inherent strengths and limitations/biases and that each of the methods be used to assess the same phenomenon (Aagaard *et al.*, 2014:17). It is, therefore, crucial to apply the correct “mix” of methods so as to enhance and not diminish the validity of the research findings.

These mixed techniques of data collection might be applied consecutively or simultaneously, and might serve a dual purpose that successfully allows the results of one data collection method to inform another (McKerchar, 2008:20). This means that the researcher might use the results of (for example) a focus group to inform the questions for a questionnaire as a method for final data collection to test a hypothesis about a specific phenomenon, as was the case in the study performed by McPhail *et al.* (2010:31). The same could be said for

using interviews and other qualitative research methods of data collection to inform the use of other quantitative methods, and vice versa.

An example of how mixed-method research could be applied in the field of accounting education is discussed next.

Example 2-5: Mixed method research

The use of interviews to identify obstacles that audit students at higher educational level perceive to be hindering their passing the audit subject. The results or themes that emerged as reasons for student failure in the audit subject can then be used to develop a questionnaire for all the audit students in the same population, including the students who failed the audit subject.

In this way, the views of students currently failing the audit subject can be corroborated. Hence, endless possibilities of combinations exist.

2.6 Chapter summary

Knowledge and the methods we apply in discovering knowledge are subjective. This chapter's first objective was to provide the novice accounting education researcher with some guidelines on the philosophies and intricacies of the science of research methodology so as to equip them with a point of reference when doing research and interpreting results, specifically in the social sciences. Secondly, this chapter aimed to highlight some best practices in conducting research that are also applicable to accounting education research in general. Finally, this chapter served as the literature review for identifying the research methodologies to be applied in this study. This chapter commenced with an investigation of the positivist and interpretivist paradigms, exploring their ontological, epistemological and methodological assumptions. Based on these assumptions, researchers in the field of accounting education will each have their own preference according to which they will conduct research, whether in the positivist or in the interpretivist paradigm. Some examples of the practical application of these research paradigms within accounting education were illustrated.

The different methodologies applicable to these paradigms were further explored, concluding that both the qualitative and quantitative research methodologies have their advantages and limitations and would be suitable for investigating certain phenomena in the field of accounting education. The different methods of data collection in each of these research methodologies came under scrutiny, where the suitability of each was discussed, together

with its own set of strengths and weaknesses. Various examples of how these methodologies are and can be applied in the field of accounting education were also provided.

The importance of research design and the theoretical frameworks that the accounting education researcher can apply while conducting qualitative research was discussed. These theoretical frameworks serve as the foundation on which every research project should be built and provide a point of departure for practitioners to understand the research designs applied by accounting education researchers. Mixed methodologies were discussed, together with the philosophical paradigm they belong to. Various methods in combining quantitative and qualitative methodologies were observed, and a motivation was provided for the use of mixed methods as to maximize research contributions in accounting education. The overarching conclusion is that researchers in accounting education have to apply a research methodology that is applicable and feasible in investigating the specific phenomenon requiring attention. The choice of research method will, therefore, depend on what the researcher wants to achieve ultimately.

It can therefore be concluded that a number of paradigms, methodologies, methods and theoretical frameworks can be applied in accounting education research. No one of these methods are superior to the other, as no one phenomenon has its own methodology for discovery and explanation. Albert Szent Gyorgyi said: “Research is to see what everybody else has seen, and to think what nobody else has thought” (Gyorgyi, 2014). This implies endless possibilities for the innovation of the methods for investigating phenomena affecting accounting education which could, in turn, close the gap between what occurs in practice and what is researched in this field. Researchers in the accounting education field should, therefore, attempt to investigate phenomena by means of using different research designs and combinations thereof, by applying the best practices highlighted throughout this chapter and the recommendations made, as this may contribute to the robustness of research in this field, and develop the novice accounting education researcher into an established well-rounded scholar in this field.

As a starting point on this road to scholarship, it is recommended that the novice accounting education researcher realises and makes an effort to understand that research in accounting education, as in any research field, has a philosophical perspective, and involves thinking about assumptions as to how one observes the social world. It is therefore imperative that any research project in accounting education starts, by first, determining how the researcher views the phenomena under investigation (ontology), whether from a realist perspective where an external reality exists objectively from the researcher, or from a relativist

perspective where reality depends on various situations and factors. The ontological position should then translate into epistemology where the questions regarding how the researcher views knowledge (i.e. how the researcher came to know about the phenomenon) are determined. This knowledge can either be based on the experience of the senses which can be observed inside or outside of the classroom setting, or be seen as multi-layered and complex where a single phenomenon, such as the observation that audit students with no practical experience struggle to master the robust volume of study material, can be understood in numerous ways.

The outcome of the epistemology decisions should determine the research paradigm in which the accounting education researcher conducts research as to obtain an understanding of the observed phenomenon. This should be followed by the decision on how the accounting education researcher can go about obtaining the required knowledge (methodology), either through forming a hypothesis (deductive) to be tested, or making general conclusions based on repeated observations (inductive). Finally, the accounting education researcher should only then select the method of data collection pertaining to the specific research paradigm, whether it is in the form of a questionnaire, focus group discussion, interview or a combination thereof.

Chapter 3

The audit teaching-learning environment: The audit lecturer and the classroom

“Wise teachers create an environment that encourages students to teach themselves.”

– Leonard Roy Frank

3.1 Introduction

In chapter 1 (paragraph 1.1, page 1) it was noted that lecturers are seen as the most important variable in the audit teaching-learning environment because they are in a position to control the majority of the other variables affecting the teaching-learning environment (Fouché, 2006:15). These variables include *assessment methods*, *teaching methodologies* and the *general characteristics of a lecturer*, for example, the communication between the lecturer and the student (Barac, 2012:52). One more variable that the audit lecturer has control over is the *audit classroom (i.e. milieu)*. Countless researchers in the audit education arena have stated the prominence of setting the audit classroom as a milieu that serves as a medium representing audit practice, as this will benefit the audit student in numerous ways (Chiang *et al.*, 2011; Groomer *et al.*, 1992:48-50; Pillsbury 1993:130-135).

That being said, the best approach or combination of methods of teaching auditing at university or other higher education institutions remains contested. Accounting lecturers, more specifically audit lecturers, are under immense pressure to deliver students to the marketplace who possess the necessary skills and technical abilities to function effectively in today's practice from the start (Jones & Swanger, 2012:30). Despite the need for change in audit education, as well as the fact that the audit lecturer is deemed an important variable in establishing this change, a study by Boyd *et al.* (2000:36) noted that lecturers, traditionally, avoid change, because adapting to change is time consuming, problematic in many instances and the contrary to what is believed and known.

This chapter explores the audit lecturer and the audit classroom under his or her control as two variables that are having an effect on the current method in the field of auditing at universities or other higher education institutions. This is done by, first, defining the lecturer as a variable that affects change in audit education. This entails a description of the general characteristics of a “good” lecturer, the teaching methodologies applied in education in

general, the assessment and feedback approaches currently being used and available to the lecturer and, finally, how the audit lecturer can apply these findings in bringing change to the audit classroom. Secondly, this chapter investigates the physical classroom and the importance of the lecturer's setting of the classroom to create an atmosphere resembling audit practice.

Chapter 3 concludes with a summary on the findings of the chapter. Conclusions are drawn on how the audit lecturer and the audit classroom can contribute to the process of transforming audit education so as to deliver students with the necessary expertise and technical capabilities to function successfully in practice after graduation. In doing so, the second secondary research objective is addressed (paragraph 1.5, page 15).

3.2 Defining the lecturer in the audit teaching-learning environment

As noted in chapter 1 (paragraph 1.1, page 1), Booth *et al.* (1999:280) identified *teaching methodologies* as a variable that is controlled by the lecturer. The *general characteristics* of lecturers, together with their *assessment* and *feedback approaches*, were also identified by many accounting education researchers as important variables to consider if change is to be brought to accounting education in general (Fouché, 2006:15; Wilkinson, 1992:27). The factors affecting each of these variables, over which the lecturer has control and which the audit lecturer can, ultimately, use to bring change to audit education, are discussed in detail in the following paragraphs:

- General characteristics of lecturers – paragraph 3.2.1, page 56;
- Teaching methodologies – paragraph 3.2.2, page 80; and
- Assessment and feedback approaches – paragraph 3.2.3, page 97.

This section concludes with a summary on the audit lecturer, provided in paragraph 3.2.4 on page 102.

3.2.1 General characteristics of lecturers

A variety of studies were identified from educational literature describing lecturer attributes which would increase their effectiveness in the classroom. A lecturer is seen as an academic who can boost student learning and has an assortment of physiognomies and skills to develop the knowledge of the student cohort (Heffernan *et al.*, 2009:14).

From pedagogical literature on education and lecturer characteristics, both personal and organisational attributes of effective lecturers were noted as areas which have been extensively researched over the last two decades. Entwistle and Tait (1990:169) claimed that lecturers should be *interested in the subject content*, *organise and prepare for lectures*, have an *ability to explain*, *show interest* in students, have good quality *assessment and feedback* methods, and be *approachable* to students. Davey *et al.* (1999:328) described an effective lecturer as an individual who creates an environment in which people *feel safe* in advancing their views and who is a *competent communicator*; a *critical thinker* and a *self-directed learner*.

Presenting *well-prepared lectures*, being *knowledgeable* of new developments and research in the subject area and being *approachable* are some of the lecturer characteristics that were identified by Hill *et al.* (2003:16). They further stressed that a lecturer should be a *good communicator* and be *supportive* to students (Hill *et al.*, 2003:16). The above views are supported by Collins *et al.* (2007:131) as they stated that lecturers, in general, should be *sensitive* to student needs, be *well informed* on course content, be *organised* in preparing course content, be *animated* in delivering course material, be *available* to students, be an *expert* in their field, be *impartial* and have the *ability to clearly convey* course material.

Table 3-1, starting on the next page, summarises the frequently cited research on the topic of attributes and characteristics of effective lecturers. This summary was generated from an investigation of the extant research in this area, from which the most pertinent, influential and regularly cited papers were identified.

Table 3-1: Frequently cited research on characteristics of effective lecturers

Authors	Characteristics and attributes of effective lecturers	Research methodology
Entwistle and Tait (1990:169)	<i>The lecturer should:</i> • Be interested in the subject content; • Organise and prepare for lectures; • Have an ability to explain; • Show interest in students; • Have good quality assessment and feedback methods; and • Be approachable to students.	Method: (i) Quantitative, (ii) quantitative Instrument: (i) Students were asked to document their interpretation of lecturer effectiveness, (ii) 5-point Likert scale questionnaire Analysis: (i) Factor analysis, (ii) factor analysis Population: (i) and (ii) undergraduate students Number of respondents: (i) 431, (ii) 271
Samuelowicz and Bain (1992:98)	<i>The lecturer should:</i> • Convey knowledge; and • Facilitate student independent learning.	Method: Qualitative Instrument: Semi-structured interviews Analysis: Content analysis Population: 13 academic teachers from two universities in the United Kingdom and Australia Number of respondents: 13
Lowman and Mathie (1993:86)	<i>The lecturer should:</i> • Plan lectures individually; • Ensure good morale in the classroom; and • Motivate students.	Method: Qualitative Instrument: Teaching assistant manuals Analysis: Content analysis Population: Teaching assistant manuals of 18 American universities

Table 3-1: Frequently cited research on characteristics of effective lecturers (continued)

Authors	Characteristics and attributes of effective lecturers	Research methodology
Patrick and Smart (1998:168)	<i>The lecturer should:</i> • Respect students; • Treat all students equally; • Have an interest in students; • Be caring; and • Challenge students to higher standards.	Method: (i) Qualitative, (ii) quantitative Instrument: (i) Students were asked to document the answer to one open-ended question, (ii) 5-point Likert scale course experience questionnaire Analysis: (i) Content analysis, (ii) factor analysis Population: (i) 148 and (ii) 266 undergraduate students at an Australian university Number of respondents: (i) 148, (ii) 266
Xiao and Dyson (1999:354)	<i>The lecturer should:</i> • Be enthusiastic about the subject and teaching; • Have well-perceived personality characteristics; • Apply clear thinking and have own ideas and not simply follow those of others; • Provide intellectual challenges and encourage independent thought; • Apply effective teaching methods and give integrated examples; • Stimulate interest in the subject; and • Have good communication and presentation skills.	Method: Qualitative Instrument: Repertory grid technique Analysis: Construct analysis Population: 32 undergraduate students Number of respondents: 31

Table 3-1: Frequently cited research on characteristics of effective lecturers (continued)

Authors	Characteristics and attributes of effective lecturers	Research methodology
Davey <i>et al.</i> (1999:328)	<i>The lecturer should:</i> • Create an environment in which people feel safe in advancing their views; • Consider different methods of assessment; • Be a competent communicator; • Be a critical thinker; • Be a competent researcher and self-directed learner; • Be an effective member of a team; • Be alert to ethical considerations; and • Be intellectually flexible and adaptive.	Method: Literature review on contemporary accounting education and society, summarising findings of researchers over a number of years
Kramer and Pier (1999:21-28)	<i>The lecturer should:</i> • Be knowledgeable; • Be down to earth with students; • Be available outside of class; and • Be concerned about student learning.	Method: (i) Qualitative, (ii) quantitative Instrument: (i) Focus groups, (ii) q-sort analysis Analysis: (i) Content analysis, (ii) factor analysis Population: Undergraduate students at a Midwestern university consisting of (i) focus groups of 3-6 members and (ii) 126 undergraduate students Number of respondents: (i) 33, (ii) 126

Table 3-1: Frequently cited research on characteristics of effective lecturers (continued)

Authors	Characteristics and attributes of effective lecturers	Research methodology
Young and Shaw (1999:675)	<i>The lecturer should:</i> • Be knowledgeable about the subject; • Communicate effectively; • Be enthusiastic about teaching; • Be well prepared for lectures; • Adapt to student needs and be respectful to students; • Be warm and friendly and motivate students to do their best; • Be self-confident and genuinely enjoy teaching; • Be concerned about student learning; • Explain material clearly; • Be accessible outside the classroom; and • Make use of appropriate assessment methods.	Method: Quantitative Instrument: 25-item, 3-point Likert scale questionnaire Analysis: Multiple regression, cluster and discriminant analysis Population: 912 post- and undergraduate students at a medium-sized Western university Number of respondents: 912
Emery <i>et al.</i> (2003:41)	<i>The lecturer should:</i> • Be reliable in meeting the class and be available outside class time; • Grade fairly and reasonably; and • Be prepared for class, and have knowledge and remain knowledgeable.	Method: Literature review by critiquing student evaluations of teacher effectiveness

Table 3-1: Frequently cited research on characteristics of effective lecturers (continued)

Authors	Characteristics and attributes of effective lecturers	Research methodology
Hill et al. (2003:16)	<i>The lecturer should:</i> • Teach at the right level so that students understand; • Present well-prepared lectures; • Organise content well; • Have knowledge of new developments and research in the area; • Have the ability to transmit enthusiasm for the subject; • Be stimulating and interesting; • Be flexible to meet student needs and be approachable; • Be encouraging in both written and oral feedback; • Be a good communicator; and • Be supportive to students.	Method: Qualitative Instrument: Focus group discussions Analysis: Grounded theory analysis Population: A range of higher education students Number of respondents: 6 focus groups
Brown (2004:521-528)	<i>The lecturer should:</i> • Be competent and have knowledge about his or her field; • Be willing to answer questions; • Show flexibility and be willing to explain things in different ways; and • Treat their students as individuals.	Method: Qualitative Instrument: (i) Unstructured focus groups, (ii) unstructured interviews Analysis: Conversation analysis Population: 69 students at a university in the United Kingdom Number of respondents: (i) 22, (ii) 4

Table 3-1: Frequently cited research on characteristics of effective lecturers (continued)

Authors	Characteristics and attributes of effective lecturers	Research methodology
Swanson et al. (2005:38)	<i>The lecturer should:</i> • Be knowledgeable; • Be empathetic; • Be friendly; • Be helpful; • Be reliable; • Be responsive; and • Be expressive.	Method: (i) Qualitative, (ii) quantitative Instrument: (i) and (ii) 7-point Likert scale questionnaire including 7 open-ended questions Analysis: (i) content analysis, (ii) ANOVA Population: Undergraduate students of universities in China, New Zealand, Poland and the United States Number of respondents: 839
Gruber and Voss (2006:229)	<i>The lecturer should:</i> • Have sufficient knowledge about the subject he or she teaches; • Be open to suggestions, criticism and questions; • Make time for student interaction during and after lectures; • Give lectures in a logical format; • Be friendly and approachable; • Transmit friendliness, excitement and interest in the subject; and • Be able to select the correct teaching methods.	Method: (i) Qualitative, (ii) quantitative Instrument: (i) and (ii) laddering questionnaires Analysis: Laddering technique Population: 53 students at a European university Number of respondents: 53

Table 3-1: Frequently cited research on characteristics of effective lecturers (continued)

Authors	Characteristics and attributes of effective lecturers	Research methodology
Collins <i>et al.</i> (2007:131)	<i>The lecturer should:</i> • Be sensitive to student needs; • Be well informed on course content; • Be organised in preparing course content; • Be animated in delivery of course material; • Clearly convey course material; • Be available to students; • Be an expert in his or her field; and • Be impartial.	Method: (i) Qualitative, (ii) quantitative Instrument: (i) and (ii) 5-point Likert scale questionnaire containing both open- and closed-ended questions Analysis: (i) Various methods, (ii) factor analysis. Population: 912 college students attending a public university in a mid-Southern state Number of respondents: 912
Voss <i>et al.</i> (2007:954)	<i>The lecturer should:</i> • Be enthusiastic about teaching; • Provide counselling and support to students; • Be approachable; • Be knowledgeable; • Be attentive to students; • Make lectures interesting and bring humour to the classroom; • Be friendly toward students and motivate them; and • Have good communication skills.	Method: (i) Qualitative, (ii) quantitative Instrument: (i) Laddering interviews, (ii) laddering questionnaires Analysis: Laddering technique Population: 72 students at a European university Number of respondents: 72

Table 3-1: Frequently cited research on characteristics of effective lecturers (continued)

Authors	Characteristics and attributes of effective lecturers	Research methodology
Young (2010:70)	<i>The lecturer should:</i> • Have knowledge of the subject matter; • Communicate effectively; • Adapt to student needs; • Be tolerant; • Have respect for students; • Motivate students to do their best; • Be concerned about student learning; • Design understandable course material; • Be accessible outside of the classroom; and • Motivate students to take responsibility.	Method: Quantitative Instrument: Web-based 5-point Likert scale questionnaire Analysis: Regression analysis Population: 441 under- and postgraduate students Number of respondents: 203
Byrne and Flood (2010:140)	<i>The lecturer should:</i> • Motivate students; • Give feedback on how work was performed; • Be good in explaining things; and • Make the subject content interesting.	Method: Quantitative Instrument: A 23-item course experience questionnaire based on a 5-point Likert scale Analysis: Factor analysis Population: 280 undergraduate students Number of respondents: 204

Table 3-1: Frequently cited research on characteristics of effective lecturers (continued)

Authors	Characteristics and attributes of effective lecturers	Research methodology
Aregbeyen (2010:66-68)	<i>The lecturer should:</i> • Discuss recent developments in the subject field; • Present original ideas and concepts and explain clearly; • Be well prepared; • Give lectures that are easy to outline; • State objectives for each class session; • Encourage class discussion; • Have interest and concern in the quality of his or her teaching; • Have genuine interest in students and be friendly toward students; • Relate to students as individuals; • Be accessible to students outside of class; • Respect students; • Have an interesting style of presentation; • Enjoy teaching; and • Be polite, inspiring, consistent, rational, considerate and punctual.	Method: Quantitative Instrument: A 5-point Likert scale questionnaire Analysis: Various statistical methods Population: 700 undergraduate students at a Nigerian university Number of respondents: 602

Table 3-1: Frequently cited research on characteristics of effective lecturers (continued)

Authors	Characteristics and attributes of effective lecturers	Research methodology
Chireshe (2011:267)	<i>The lecturer should:</i> • Be approachable; • Be helpful; • Ensure that students are comfortable around him or her; • Be sensitive to students' needs; • Consider students' level of understanding; • Have good voice projection; • Explain well; • Be fluent in English; • Be competent; • Be knowledgeable; • Be resourceful; • Be impartial; and • Be unbiased.	Method: Qualitative Instrument: Qualitative questionnaire Analysis: Content analysis Population: 77 undergraduate students Number of respondents: 77

From the empirically proven findings in the above studies, educational researchers have identified various lecturer attributes which will assist in student learning. All these studies have noticeable overlaps in their definitions of the skills and personal characteristics of lecturers in general. In an attempt to isolate these overlaps and identify constructs of lecturer behaviours which can be applied in transforming audit education, **attribution theory** was employed.

Primarily, attribution theory is the way in which one person makes inferences about the underlying causes of others' behaviour (Kelly & Michela, 1980:458). Kelly (1967, as cited by Heffernan *et al.*, 2009:14) stated that attribution theory is “a cognitive process people use to assign an underlying explanation or cause to an observation made”.

Robertson and Rossiter (1974:13) described attribution theory as a research framework with the focus on perception of intent. Consequently, attribution theory is applied to specify the way in which people interact with their social environment and then to identify constructs based on the observed personal behaviour of an individual. By applying attribution theory in this study, several main constructs (characteristics) in lecturer behaviour were noted from the literature, which will be discussed further. These include the *character and personality* of the lecturer, *communication* between the lecturer and the student, *motivating* the student, the lecturer's *commitment to continuing professional development (CPD)* and the lecturer's *preparation for and presentation of the actual lecture*.

These characteristics, and how they can be applied by the audit lecturer in transforming audit education, are discussed next (paragraph 3.2.1.1, page 68 to paragraph 3.2.1.5, page 78).

3.2.1.1 Character and personality

Over the last two decades, a number of studies have highlighted the importance of the lecturers' character and personality as a strong determinant in evaluating lecturer effectiveness (e.g. Clayson, 1999:74; Curran & Rosen, 2006:135).

Clayson (1999:74) argued that the students' perception of the personality of an effective lecturer raises interesting and complex issues, for example, the fact that students have certain preferences toward personality attributes in lecturers which influences the students' evaluation as to whether a lecturer is seen as effective. This in itself will have a significant influence on students' attitudes toward lecturers, the lectures they present and, ultimately, the subject presented by the specific lecturer (Curran & Rossen, 2006:135).

Fouché (2006:32) concurred by stating that the lecturer's personality is a factor that draws students toward the subject or pushes them away. Further findings suggest that the extent to which a lecturer is deemed effective has more to do with *who* lecturers are than with *what* they *do* or *know* or the *amount of effort* that students put into a subject themselves (Delucchi, 2000:228; Moore & Kuol, 2007:140-141). From these views, it can be concluded that the lecturer's personality or likability and whether students can relate to the lecturer's personality do indeed have an impact on students' attitude toward a subject and, in turn, on their learning process in the specific subject.

A variety of lecturer attributes which will assist in student learning and improve students' attitude have been identified in table 3-1. These can be summarised as being:

- Friendly;
- Respectful;
- Impartial; and
- Compassionate and selfless by putting the student's needs first.

All these attributes will contribute to one of the most frequently cited personality traits of lecturers, namely being *approachable*, which will indeed affect whether student learning will improve or not (Chireshe, 2011:267; Gruber & Voss, 2006:229; Hill *et al.*, 2003:16; Voss *et al.*, 2007:954).

In summary, it is debatable whether lecturers should or could change their personality so that student learning can be improved. Nevertheless, based on the numerous studies conducted at higher education institutions, it is clear that the personality of lecturers in general does indeed have an effect on the student and, eventually, the overall teaching-learning environment. The accounting lecturer, but more specifically the audit lecturer, forms part of this overall teaching-learning environment and, therefore, controls the approach to education in general. It is vital that audit lecturers not only recognise the impact of their characteristics and personality, but also continue to develop attributes that form part of their persona so as to enrich student learning and, ultimately, bring change to the current approach to audit education.

3.2.1.2 Communication

The importance of communication between the student and the lecturer and its influence on student learning, experience and satisfaction have been emphasised by several educational

researchers such as Brown and Daly (2007:1) and Gaffney-Rhys and Jones (2008:3). Brown and Daly (2007:1) presented a paper at the ISANA (International Student Advisors' Network of Australia) International Conference to Student Success in International Education where they indicated the relevance of lecturer communication in a multicultural higher education context. They noted that a variety of factors, affecting the student specifically, play a part in the way communication between lecturers and students can be improved to result in better student comprehension of the subject content. These factors include (i) individualism, i.e. the habit or principle of being independent; (ii) collectivism, i.e. the practice or principle of cohesion within a group; (iii) the language of instruction; and (iv) the language proficiency levels of students (Brown & Daly, 2007:2-3).

Adding to these factors, Hendricks (1987, as cited by Fouché, 2006:31) highlighted three concepts that summarise the core of effective communication between the lecturer and the student in the classroom: first, the credibility of the lecturer (ethos), secondly, the compassion with which the lecturer stimulates the desire of the student (pathos) and, finally, the content of the communication (logos). Fouché (2006:32) concluded that, if lecturers incorporated all these core concepts in their communication with students, students would have more confidence, motivation and understanding of the subject content.

With regard to communication outside the classroom, the use of technology is by far the most contemporary problem in lecturer–student communication, specifically social networks and other communication technologies such as Facebook, MySpace, YouTube, Flickr, Twitter, DropBox, podcasts and blogs, which have found their way into the academic environment. Many educational researchers, such as Usun (2009:331) and Moran *et al.* (2011:3), have done extensive work in this field, all drawing the same conclusion that lecturers' use of social media as a means of communication with students is on the increase.

Moran *et al.* (2011:3) explored the use of social media by today's higher education faculties. Their study included a wide variety of higher education faculties in the United States, which all confirmed that lecturers are vast consumers and supporters of social media (Moran *et al.*, 2011:3). Nearly all higher education lecturers in their study were aware of the main social media sites; more than three-quarters had visited a social media site within the past month for personal use; and approximately half of them had posted content (Moran *et al.*, 2011:3). Even more remarkable is the extent to which they use social media in their professional lives: over 90% of all lecturers were using social media in courses they were lecturing or for their professions separate from the classroom (Moran *et al.*, 2011:3).

Despite the conclusion that the use of social media by lecturers are on the increase, Usun (2009:331) elaborated on the importance of changing lecturer attitudes toward the integration of technology. Moreover, Jones *et al.* (2012:722), as discussed in chapter 1 (paragraph 1.1.2, page 5), stated that the students of today, having grown up with computers and the Internet, are said to have a natural ability and high skill level when it comes to using new technologies. Therefore, lecturers and learning institutions have a duty to change in reply to the demands of this new generation of students.

Although there seems to be no problem with social media use as a medium of communication between faculty members and students in the United States, a study by Gaffney-Rhys and Jones (2008:3) at a British university presented opposite results. They found that lecturers teaching professional programmes such as accounting or teacher education seemed to be upholding a firm hierarchical affiliation offline. This appeared to have affected their attitudes regarding the use of social media as a platform for communicating with students (Gaffney-Rhys & Jones, 2008:12). Interviews were conducted with lecturers in this study and one lecturer commented as follows (Gaffney-Rhys & Jones, 2008:12):

“I care for my students, but I want to maintain the boundaries, I am the lecturer, they are the student”.

In a South African context, Bosch (2009:185) explored the use of Facebook at the University of Cape Town. This researcher concluded that the current generation of youth, who are often described as “Net Geners” or “Digital Natives,” are resistant to traditional methodologies applied inside and outside the classroom, and that Facebook is useful in communicating with students (Bosch, 2009:197). One major advantage of Facebook as communication medium between the lecturer and the student identified in Bosch’s study was that lecturers were able to answer the same question, in bulk, for large numbers of students by using a technology tool with which students are already acquainted (Bosch, 2009:197). An example follows:

Example 3-1: Facebook use as communication tool

The lecturer creates a page on Facebook that enables students to post questions while they are performing a specific task outside of the classroom. The lecturer is then notified, by means of an application embedded in Facebook, that a post has been made on the page. Consequently, the lecturer can answer the question on the page for all students to view.

(Source: Author)

Social media are, however, not without limitations. Bosch (2009:197) stated the following:

“Compared to other commonly used online tools, Facebook is limited, e.g. for managing groups, Facebook does not offer a wiki” (a website or database developed collaboratively by a community of users, allowing any user to add and edit content), “it is not possible to send group notifications, and material cannot easily be deleted or archived. Lecturers find it challenging to use Facebook due to varying Information Communication Technology literacy levels, and many South African higher education institutions do not have access to the resources that enable widespread computer-based teaching and learning.”

To date, the majority of these limitations have been addressed by Facebook developers, hence, allowing the lecturer and student to effectively communicate by this means. In this regard, Barnes *et al.* (2007) argued that, by incorporating the use of lecturer-to-student communication online with the habits of the current generation of students, student learning will be enhanced. Consequently, social media use is an effective and fresh approach to communication at higher education level.

In summary, communication between the lecturer and the student, in general, is deemed as a critical factor that affects the overall teaching-learning environment. Although it is clear that some accounting and education lecturers in some countries see the use of social media as a communication medium of little significance, the majority of lecturers acknowledge the value of social media as a means of communicating with their students to enhance student learning.

In an audit education context, audit lecturers should and can incorporate social media as a means of communication with their students. This, in turn, will assist in:

- Establishing the credibility of the lecturer (ethos) from a student perspective;
- Stimulating the desire of students to learn, as they are familiar with technological methods of communication (pathos); and
- Finally, communicating the content of the subject as well (logos).

It can further serve as a medium to bridge the issues of individualism, collectivism and the language proficiency levels of students (Brown & Daly, 2007:2-3). This can also aid in bringing change to the current approach in audit education and result in students with higher self-confidence, and motivation and a better understanding of the subject content.

3.2.1.3 Motivation

The motivational approach followed by an individual has an impact on the motivation, emotion, performance and learning ability of others. Hence, by motivating students, lecturers can encourage student participation inside and outside the classroom. In general, being motivated or to be motivated is affected by two factors, namely *intrinsic* and *extrinsic* motivation (Deci & Ryan, 2008:182; Gagne & Deci, 2005:331). Gagne and Deci (2005:331) described intrinsic motivation as when individuals perform an action due to the fact that they find the action interesting and develop spontaneous satisfaction from the action itself. Black and Deci (2000:741) defined the concept of intrinsic motivation as when activities are undertaken out of interest and sustained by the spontaneous thoughts and feelings that arise as one completes the activity.

Deci and Ryan (2008:182) later stated that this form of motivation occurs when people have integrated the value of performing an activity into their sense of self. Intrinsic motivation is, therefore, an internal driver and encourages an individual to participate in an action or to perform an activity which leaves the individual with a feeling of satisfaction and accomplishment.

In contrast, extrinsic motivation occurs when people perform an activity to obtain some sort of distinguishable outcome (Ryan & Deci, 2000:71). Gagne and Deci (2005:331) added by stating that a person is motivated to perform an activity by receiving tangible or verbal rewards, so satisfaction comes not from the activity itself (intrinsic motivation), but from the extrinsic consequences to which the activity leads. Similarly, Black and Deci (2000:741) noted that extrinsically motivated behaviours are carried out and continued because of the possibility of obtaining a reward and could also include the motivation of avoiding a possible punishment. Individuals are, therefore, not always motivated by the feeling of self-satisfaction and accomplishment, but by a “what is in it for me” attitude instead.

Based on these views, students seem to be driven by these two types of motivation. The effect of these two types of motivation in students in general has been studied by several educational researchers. Based on these studies, one distinct philosophy, referred to as *self-determination theory (SDT)*, provides insight into how lecturers’ motivational approach, in turn, affects student engagement in a specific subject (Ames & Archer, 1988:260; Gagne & Deci, 2005:332; Ryan & Deci, 2000:68). This theory can be applied by lecturers in general, both inside and outside the classroom, to encourage student learning, and will be discussed next.

Self-determination theory suggests that a lecturer's motivational approach toward students can be conceptualised along a continuum which varies from controlled to autonomous motivation (Deci & Ryan, 2008:183). According to Black and Deci (2000:741), SDT posits that individuals' motivated behaviours differ in the extent to which they are self-directed versus controlled. Ryan and Deci (2000:68) viewed this theory as the investigation of people's inherent development, inclinations and distinctive psychological needs which are the foundation of their self-motivation and personality amalgamation, as well as of the circumstances that foster positive developments. Therefore, SDT suggests that the extent to which an individual is motivated depends on whether the motivational style applied is controlled or autonomous.

From an education perspective, lecturers who support autonomous motivational styles are prone to facilitate, whereas controlling lecturers interfere with students' self-determined intrinsic motives and the activity that is performed in the classroom (Barch *et al.*, 2004:148). Black and Deci (2000:742) conceptualised this autonomy-supportive approach in motivating students as when the lecturer takes the students' standpoint, acknowledges their feelings, and provides them with relevant information and opportunities for choice (intrinsic motivational approaches) which, in turn, minimise the use of pressures and demands (extrinsic motivational approaches). These researchers further claimed that an autonomy-supportive lecturer might offer students the necessary information while encouraging them to use the information in resolving the problem in their own way (Black & Deci, 2000:742). Example 3-2 is provided below to clarify the use of autonomous motivation as an approach that would intrinsically motivate students in audit education specifically:

Example 3-2: Autonomous motivational style

*In identifying the risk of material misstatement at the overall financial statement level, from the information provided to you in the test, **you can choose** an approach you are comfortable with in coming to the correct answer.*

(Source: Author)

In the above example, an autonomous motivational style gives the students a choice in method, thereby encouraging them to answer the questions by their own means. In contrast, a controlling-supportive lecturer will ensure that the students behave in a particular way by applying coercive methods which usually include reward or punishment (Black & Deci, 2000:742).

According to Barch *et al.* (2004:148), controlling-supportive lecturers set a lecturer-centred agenda that prescribes what students should think, feel and do. They will offer extrinsic incentives and use pressuring language to ensure that students adhere to this agenda, with detrimental effects on the students' intrinsic motivation (Barch *et al.*, 2004:148). In example 3-3 below, a controlled motivational style is applied to the same fact pattern as in example 3-2, but with extrinsic motivation as a result, because the reward and/or punishment of completing or not completing the required task are used as motivational tool:

Example 3-3: Controlled motivational style

*In identifying the risk of material misstatement at the overall financial statement level, from the information provided to you in the test, **you must apply** the approach as indicated in the question, otherwise **you will not do well** in the test and, subsequently, **obtain low marks**.*

(Source: Author)

From the literature and these two examples of how SDT can be applied, the conclusion is drawn that, when lecturers apply an autonomous style in motivating students, students will be motivated intrinsically. On the other hand, when lecturers apply a controlled style, students will be motivated extrinsically.

The question, however, remains as to which motivational approach audit lecturers should follow to not only motivate students, but also improve student learning, with the ultimate aim of bringing change to the current approach in audit education. The literature extensively argues for the use of an autonomous motivational approach as the best method in general, because this approach has many crucial advantages to student learning such as comprehension of the subject content. Table 3-2 summarises these arguments.

Table 3-2: Advantages of an autonomous motivational approach

Advantage	Source
Results in greater perceived competence and ensures that intrinsic motivation for the specific subject or task is established.	Deci <i>et al.</i> (1981:2)
Results in more positive emotionality in students.	Patrick <i>et al.</i> (1993:781)
Results in a greater conceptual understanding of the subject content.	Grolnick and Ryan (1987:896)
Results in achieving higher academic performance.	Boggiano <i>et al.</i> (1993:319)
Ensures greater persistence and lower dropout figures in a specific course.	Vallerand <i>et al.</i> (1997:1161)

From these advantages, one can see that, in an educational environment, an autonomous-supportive approach to motivating students would fundamentally contribute to (i) the lecturer's taking of a student-centred orientation; and (ii) students' being encouraged to learn. Thus, when lecturers apply an autonomous-supportive approach, more long-term interest in the subject, together with the development of spontaneous satisfaction when studying the subject content, will be intrinsically fostered in the student. It will further encourage the students to actively explore the subject, to master the required outcomes and, ultimately, to obtain a feeling of satisfaction and accomplishment, without being forced to do so by the lecturer when he or she applies controlled motivational approaches such as offering rewards or stating the consequences of not participating.

According to these findings, there appears to be a shift in motivational approaches in general toward intrinsic rather than extrinsic motivational behaviours. This seems promising for improving student success and psychological development.

From an audit education perspective, lecturers can accomplish this by:

- Being more student oriented and responsive to their needs and concerns; and
- Attempting to apply autonomous motivational styles such as providing students with choices so as to enhance the development of intrinsic motivation within them and diminish extrinsic motivational behaviours such as studying the audit subject only due to a fear of failure.

This will contribute to bringing change to the approach followed to motivate students to study auditing and to fostering the much-needed transformation in the current teaching methods in audit education.

The lecturer's commitment to continuing professional development (CPD), as a general characteristic of an effective lecturer, is discussed next.

3.2.1.4 Commitment to continuing professional development

As noted in the discussion of the general characteristics of lecturers (paragraph 3.2.1, page 56), the most frequently cited characteristic of effective lecturers is knowledgeability, i.e. having knowledge about the subject they are lecturing. Fouché (2006:30) remarked that students, in turn, should respect their lecturers for this knowledge about the subject content. For lecturers to be and remain knowledgeable and obtain the respect from students they deserve, it is essential to not only have knowledge about the subject content, but to continue to develop and improve knowledge of the subject and keep up to date with recent developments in their field of expertise.

The commitment to CPD has been highlighted by several researchers, as indicated in the table 3-1 (paragraph 3.2.1, page 56) (Aregbeyen, 2010:66-68; Collins *et al.*, 2007:131; Davey *et al.*, 1999:328; Emery *et al.*, 2003:41; Hill *et al.*, 2003:1). They stated that a lecturer should:

- Be a competent researcher and self-directed learner;
- Remain knowledgeable;
- Have knowledge of new developments and research in the area;
- Be well informed on course content; and
- Discuss recent developments in the subject field.

To achieve this, professional bodies such as SAICA require their members to uphold a satisfactory level of CPD. SAICA (2013), as part of their philosophy and strategy to CPD, stated that “[e]ach individual has the primary responsibility for his or her own competence. All professional accountants have an obligation to develop and maintain their professional competence, relevant to the nature of their work and professional responsibilities”.

The majority of audit lecturers at universities and other higher education institutions in South Africa may be members of SAICA. The commitment to CPD for these lecturers is stressed by SAICA (2013) in their Code of Professional Conduct (CPC). Section 4 of the CPC urges

all members to maintain their professional knowledge and skills and to implement a programme of CPD (SAICA, 2013).

In light of these requirements, it can be concluded that audit lecturers in general are required to commit to continuously developing and improving their professional competence and, therefore:

- Ensure that they remain knowledgeable by staying abreast of new developments and research in the area; and
- Be informed on the course content they are lecturing.

Audit lecturers also need to ensure that they keep up to date with all the developments in the profession and not be satisfied with the knowledge they obtained in their journey of becoming an audit lecturer. Their commitment to CPD will ensure that they remain knowledgeable, are well informed, have the ability to discuss recent developments in the subject field and, finally, are perceived as respected and competent lecturers in the eyes of their students.

All these advantages to CPD will, ultimately, contribute to the process of bringing change to the current approach to audit education. A commitment to CPD would enable the audit lecturer to continue the search for improved and contemporary teaching methods, which include preparing the actual lecture, discussed next.

3.2.1.5 Preparing and presenting the actual lecture

The literature cited in table 3-1 (paragraph 3.2.1, page 56) highlighted numerous characteristics of effective lecturers associated with the preparation and actual presentation of the lecture itself. Fouché (2006:36) contended that effective preparation takes a great amount of time and effort on the part of the lecturer. Gawe *et al.* (2012:218) add by arguing that good preparation and the use of effective teaching media will establish the need for the student to learn. This will not only encourage student participation in the classroom, but also provide for the learning needs of individual students. Overall, good preparation will contribute to stimulating the learning experience of the student and enhancing student learning.

All these advantages of effective planning and the use of teaching media in the classroom can be achieved when lecturers have the characteristics and perform the actions as summarised in the second column in table 3-3 on the next page. These characteristics apply to effective lecture preparation, the actual presentation or a combination of both.

Table 3-3: Summarised presentation preparation and the actual presentation characteristics

Lecture preparation	Lecture presentation	Combination of lecture preparation and presentation
In preparing for the actual lecture, the lecturer should: • Plan lectures individually; • Organise lectures logically; and • Be well prepared for lectures.	In presenting the actual lecture, the lecturer should: • Show good presentation skills; • Have an interesting style of presentation; • Have the ability to explain and convey knowledge clearly; and • Be animated in delivery of course material.	After good preparation, the lecturer should be able to do the following in the actual lecture: • State the objectives for each class session; • Show flexibility and willingness to explain things in different ways; • Be interesting; and • Present in a logical format that is easy to follow.

(Source: Aregbeyen, 2010:66-68; Brown, 2004:521-528; Byrne & Flood, 2010:140; Collins *et al.*, 2007:131; Emery *et al.*, 2003:41; Entwistle & Tait, 1990:169; Gruber & Voss, 2006:229; Hill *et al.*, 2003:16; Lowman & Mathie, 1993:86; Samuelowicz & Bain, 1992:98; Voss *et al.*, 2007:954; Xiao & Dyson, 1999:354; Young & Shaw, 1999:675)

Many actual lectures are presented using the popular teaching medium, Microsoft PowerPoint (Lasley & Ornstein, 2004:298). This presentation medium made its appearance in 1990 (Hewitt, 2013) and, to date, a vast number of lecturers have become accustomed to using it in their lectures. A study by Tynjälä *et al.* (2003:147) indicated that lecturers in general do not always follow or consider contemporary technology in teaching media and the possibilities of their use in the classroom. Almost a decade later, Conway *et al.* (2012:32) performed a study on the potential use and impact of Prezi, the zooming editor software, as a tool to facilitate learning in higher education. In this study, they concurred with Tynjälä *et al.* (2003:147), but expressed further concern that, although the students of today seem to be more accustomed to and prefer modern technologies such as Prezi in the classroom, their use is still limited due to phenomena affecting the lecturer such as stagnation, stubbornness and a lack of knowledge of contemporary media (Conway *et al.*, 2012:32).

As noted previously (paragraph 3.2.1.5, page 78), audit lecturers are obliged by SAICA (2013) to remain up to date with developments in their field of expertise. This “field of expertise” does not only include the audit subject content, but also the action of presenting lectures. Thus, remaining up to date implies getting to know the newest technologies available for use in the audit classroom, including Prezi, SlideDog, Go Animate, Keynote, ClearSlide and SlideRocket, all with their own set of features that could assist in student learning.

To summarise, various studies (e.g. Conway *et al.*, 2012:32) have stressed the importance of lecturers remaining up to date with the use of modern teaching media such as Prezi – although Microsoft PowerPoint has earned its place as a vital presentation tool in education today. Lecturers, but more specifically audit lecturers, should be open to using new technologies in presenting the lectures, because this will not only contribute to their CPD, as noted earlier (paragraph 3.2.1.5, page 78), but will also ensure that they remain effective. Consequently, the use of contemporary teaching technologies such as Prezi can and will bring change in the current approach to audit education. These technologies can serve as tools to motivate students and encourage their participation in the classroom. The unique presentation and learning features of these technologies can support the lecturers’ teaching methodology, which is discussed next.

3.2.2 Teaching methodologies

In defining the lecturer as a variable in the audit teaching-learning environment, the teaching methodology followed by audit lecturers was identified as a critical factor (paragraph 3.2, page 56). It would be beneficial to investigate the teaching methods used by lecturers in general to aid audit lecturers in the current stage of transition in audit education.

A variety of studies have been conducted to evaluate different teaching methods in accounting education, and specifically audit education (Agrawal & Hancock, 2012:355; Spires, 2012:220; Steenkamp & Von Wielligh, 2011:9). The findings of these studies noted that, among other things, audit courses (and, in a broader sense, accounting education) are currently presented in the form of lectures and by applying traditional methods, for instance problem solving by the educator (Hosal-Akman & Simga-Mugan, 2010:251; Siegel *et al.*, 1997:217; Steenkamp & Rudman, 2007:23). The latter methods fall within the *passive learning* category and were found to be unable to create adequate scope for the development of the skills required when entering audit practice (Adler & Milne, 1997b:110-116; Cox *et al.*, 2013:651; Moore, 2012:298).

Another method of teaching, commonly referred to as *active learning*, has been tried and tested in various fields of educational research, all reaching the same conclusion that this method contributes significantly to students' learning experience and their ability to grasp important concepts, and also improves their assessment scores (Cox *et al.*, 2013:651; Everly, 2013:151; Lubwama *et al.*, 2013:400; Steenkamp & Von Wielligh, 2011:18). Active learning methods consist of a variety of non-lecture-centred approaches and include (not an exhaustive list) the use of visual aids, case studies, simulations and cooperative learning techniques (Everly, 2013:148; Hosal-Akman & Simga-Mugan, 2010:251).

The question is raised as to which of these two approaches would benefit the learning experience of audit students the most and bring change to the approach followed in the audit classroom. Cox *et al.* (2013:652) argued that, although active learning will contribute significantly to students' learning experience, the collaboration of active, passive and *blended learning* will result in an approach that can improve student learning and satisfaction and provide greater flexibility for both the lecturer and the student. A mix of teaching methodologies would also address the different learning approaches of students.

Although there has been a drive to change from traditional classroom methods of audit education, currently there is and have been a long debate on how accounting education, but more specifically audit education should be provided (Everly, 2013:148; Hosal-Akman & Simga-Mugan, 2010:251). The following paragraphs (paragraph 3.2.2.1, page 81 to paragraph 3.2.2.4, page 93) explore different teaching methodologies and discuss the methods used to educate according to each methodology. These methodologies include passive, active and blended learning approaches.

3.2.2.1 Passive learning

Passive learning is the dominant teaching approach followed by many educators in business-related education (Cater *et al.*, 2009:400; Moore, 2012:297). In the past, passive teaching methods in all fields of study came in the form of lectures where the educator transferred information to the student (Bati *et al.*, 2013:596; Hosal-Akman & Simga-Mugan, 2010:251). Moore (2012:297) defined a lecture as a process in which the educator tells, explains and shares knowledge. A lecture is, therefore, an event during which the student sits down for a knowledge-sharing session led by the lecturer and which leaves little time and space for interaction.

Although it has many disadvantages from a student perspective, the passive approach has its purpose. Bati *et al.* (2013:596) defended lecture approach by stating that:

“Lectures encourage reflection on a subject, aid understanding, and develop scientific and clinical thought. Lectures can offer guidance with indications as to how a particular subject or procedure can be learnt, thus fostering in students the development of independent thinking with regard to their professions”.

Cater *et al.* (2009:400) indicated that lectures as teaching method are considered the best way to communicate large volumes of information in the shortest period of time. This advantage helps mitigate problems such as full curricula of professional accounting and auditing degrees, large student groups and limited infrastructure at higher education institutions in South Africa. Moore (2012:297) contended that the lecture is a superb technique to set up an atmosphere for knowledge sharing about a new topic, to create a frame of reference, to present a unit, or to deliver an application for student activities.

Nevertheless, research has proven that lectures do not result in a full grasp of the subject or clear understanding about it (Bati *et al.*, 2013:596). Moore (2012:298) noted that lectures have serious imperfections as an effective teaching method, for example, they are boring and do not provide motivation to students, they focus on the lowest level of student cognition and might result in the development of discipline problems. Cater *et al.* (2009:400) concur by acknowledging that lectures lead to a lack of student attention and knowledge retention and that it is common for students to talk among themselves and play games during a lecture. The use of more technologically advanced presentation tools such as Prezi, as discussed earlier (paragraph 3.2.1.2, page 69), could aid in mitigating the disadvantages of a passive learning methodology.

In summary, lectures as a teaching method have been applied in the educational environment, despite their shortcomings, based on the reasoning that they are the most efficient form of conveying robust volumes of information to the students. The audit education field does indeed have large quantities of information that students need to grasp in a very short time frame. Hence, lectures have been used as the predominant method of teaching auditing at universities and other higher education institutions. These weaknesses have been acknowledged by some lecturers in audit education who have turned to active methodologies in an attempt to foster change to the current approach in audit education.

3.2.2.2 Active learning

Although lectures have been criticised on many points, they can be used to facilitate active learning which allows students to discover the course material at a profound level and cultivate improved understanding about the subject under investigation (Cox *et al.*, 2013:652). Cater *et al.* (2009:398) and Moore (2012:320) described active learning as a process that holds students responsible for their own development by engaging them in their learning. By actively engaging students in the classroom, their attention is maintained and cognitive development and knowledge retention take place.

Active learning comes in various forms and is used as an inclusive term that covers numerous possibilities (Cater *et al.*, 2009:398). As mentioned earlier (paragraph 3.2.2, page 80), these methods could include visual aids, case studies, simulations and cooperative learning techniques (Everly, 2013:148; Hosal-Akman & Simga-Mugan, 2010:251). Each of these methods has its own set of advantages and disadvantages in the field of education, as discussed below.

Visual aids

Visual aids as an active learning tool have been extensively researched in various fields of education such as medicine, IT, science and socially related sciences (Garcia-Retamero & Galesic, 2010:1019; Lledo *et al.*, 2013:88; Makepe *et al.*, 2000:215). As early as the 1950s, the use of visual aids in audit education has been advocated. Dinman (1950:1), in a paper presented at the Round Table on Visual Aids in Teaching Accounting at the annual meeting of the American Accounting Association in Boston, argued the importance of visual aids in audit education:

“Auditing happens to be a subject that cannot very well be mastered from textbook study alone. Too many detailed, discrete, and complicated procedures and practices are involved to permit sufficient remembrance and absorption on the part of students by this bare means. There is perhaps no other phase of the accounting curriculum so difficult and unrewarding in this respect”.

A few years later, Froebe’s (1959:656) study supported the use of visual aids in accounting education and pointed to the importance of this active learning method in the classroom. However, since Dinman’s (1950:1) and Froebe’s (1959:656) studies, very little research has been done on the use of visual aids in accounting education, specifically audit education. This has left a gap in the literature which needs to be explored in light of the endless possibilities of visual aids in the classroom.

Visual aids come in countless forms based on the subject content and could comprise chalk boards, display boards, overhead projectors, pictures, graphic work, communication media and slideshow presentations, with the latter being the most commonly used in higher education institutions (Gawe *et al.*, 2012:215; Lasley & Ornstein, 2004:297). These visual aids, if employed correctly, can be an effective method in audit education.

Moore and Scevak (1997:205) and Schmidt (2009:68) acknowledged a variety of advantages of using visual aids in teaching. These include an increase in understanding, learning, interest in the topic, knowledge retention by students and the authenticity of the learning experience. They also emphasised that visual aid learning has its own set of disadvantages. Visual aids might be overwhelming to students, cause misconceptions as to what they are portraying, and have limited use for students who are hearing and visually impaired (Moore & Scevak, 1997:205; Schmidt, 2009:68). However, in audit education, the advantages outweigh the shortcomings. Table 3-4 below summarises the key advantages and disadvantages that visual aids can bring to audit education as obtained from the literature. This is followed by exploring the use of case studies as an active learning method and its contribution to learning in the audit classroom.

Table 3-4: Advantages and disadvantages of visual aids

Visual aids	
Advantages	• Increase understanding; • Increase learning; • Increase interest in the topic; • Increase knowledge retention; and • Increase the authenticity of the learning experience.
Disadvantages	• Overwhelming to students; • Create misconceptions; and • Not always effective for students who are hearing or visually impaired.

(Source: Moore & Scevak, 1997:205; Schmidt, 2009:68)

Case studies

Popil (2011:205) defined the case study method as being a description of an actual situation, usually involving a decision, task, opportunity, problem or issue faced by a person or persons in an organisation. According to Healy and McCutcheon (2010:557), a case study is quite flexible, because it is defined by the method used to teach it and by the learning objectives for the specific activity. A case study is, therefore, an instructional tool used by educators to explain and illustrate complex issues and which can be moulded to fit the specific teaching objective. Case studies in various forms have been extensively researched in the field of education, and accounting education in particular, to test their effectiveness as active learning method (Agrawal & Hancock, 2012:355; Braun, 2013:400; Popil, 2011:204).

Agrawal and Hancock (2012:355) designed a case study for introductory auditing courses in which students needed to apply their auditing knowledge and judgment working through the audit process. The case study method, in this situation, proved to increase and reinforce the students' understanding of particular audit principles and techniques (Agrawal & Hancock, 2012:378). Similarly, Braun (2013:400) developed a case entitled 'Custom Fabric Ventures' as part of an introductory managerial accounting course to help students gain an understanding of job costing. Respondents' feedback indicated that this objective was met and the case study method, again, proved to be a valuable tool in accounting education (Braun, 2013:411).

In another case developed by Bromley and Harrast (2011:295), the main objective of the study was to introduce students to internal controls and governance structures with regard to financial reporting (Bromley & Harrast, 2011:314). The overarching conclusion in this study was that not only were students able to use and apply their knowledge of controls and governance requirements, but their ability to think critically and improve their communication skills were increased as well (Bromley & Harrast, 2011:314). The case study as active learning tool is, therefore, strongly advocated in accounting education, but its limitations have to be considered as well. Table 3-5 on the next page summarises the key advantages and disadvantages, as identified from the literature, of the case study method as active learning tool in the audit subject.

Table 3-5: Advantages and disadvantages of case studies

Case studies	
Advantages	• Increase critical thinking skills; • Increase problem solving and communication skills; • Increase analytical skills; • Increase understanding of complex issues; and • Increase knowledge retention.
Disadvantages	• Time consuming; • Frustrating for less-prepared students; • Overwhelming to some students; • Frustrating to students who prefer passive learning methods; and • Require knowledge about the topic applied in the case.

(Source: Agrawal & Hancock, 2012:378; Braun, 2013:400; Buntat *et al.*, 2013:2200-2204; Popil, 2011:205-207)

The shortcomings of case studies and their effect on the learning experience of students will play a definitive role in designing and applying them in the classroom. Nevertheless, the use of case studies as active learning tool in the audit classroom can enhance students' problem-solving abilities and will develop their analytical and critical thinking skills. These skills will play a major role when they enter the professional practice where the case or the simulation becomes reality.

Simulations

Simulations have brought a revolution in education in that they provide an effective pedagogical instrument for active, experiential and problem-based learning (Gurau *et al.*, 2013:76). The use of simulations has been advocated by extensive research in accounting education in recent years (e.g. Mensching *et al.*, 2012:53; Nitkin, 2011:131; Steenkamp & Von Wielligh, 2011:9; Van der Merwe, 2013:142). Mensching *et al.* (2012:53) designed a simplified business environment simulation to assist students in grasping problematic models of business planning and developing budgeted financial statements (Mensching *et al.*, 2012:53). The main objective was to, first, create a resilient understanding of the interconnection among a variety of business processes and, secondly, expose students to business modelling by means of simulations (Mensching *et al.*, 2012:53).

Steenkamp and Rudman (2007:23) developed a simple simulation assessing the usefulness of an audit simulation to undergraduate students. This study was followed up by Steenkamp and Von Wielligh (2011:9) who examined the perceptions of the same group of students who completed the simulation at undergraduate level. At that time, however, this group had greater insight after having completed their postgraduate studies and a minimum of six months of traineeship in public practice (Steenkamp & Von Wielligh, 2011:9). Other success stories in the use of simulations were those of Fouché (2006:116) and Fowler (2005:41). They developed an accounting simulation to enhance students' understanding of the accounting process all the way from transaction initiation to financial statement compilation.

The results of these studies have shown that using various simulations do contribute to learning in a variety of ways because students are introduced to the “reality” of what is being studied in a textual format. According to DeCoster and Prater (1973:137), simulations have three distinct advantages for student learning. First, simulations and games create a positive attitude toward learning and inspire engagement in the learning process (DeCoster & Prater, 1973:137). Secondly, active participation encourages learning while, thirdly, simulation provides opportunities for integration and application learning (DeCoster & Prater, 1973:137). Knechel (1989:411) stated that an element of business reality is brought to the classroom when using simulations as an active learning tool. This researcher also pointed out that simulations reduce issues of slacking that are caused by traditional teaching methods. Hoffjan (2005:63) and Knechel (1989:411) suggested that simulations provide soft-skill practice that includes teamwork, collaboration and interpersonal social skills. Hoffjan (2005:63) further argued that:

“.....business games stimulate students and motivate them to participate to a greater degree than in a conventional classroom situation. Furthermore, business games increase the ability to recall factual knowledge and appear to improve problem solving skills. Contrary to conventional teacher-centred teaching (passive approach), the business game participant is actively engaged in the learning process, which enhances learning effectiveness”.

However, simulations as an active learning tool in an educational setting also come with difficulties and disadvantages. Fouché and Visser (2008:599), together with Hoffjan (2005:70), contended that time constraints in performing a simulation have proven to be the greatest difficulty faced by the majority of students who participate in a simulation. They further explained the necessity of clear instructions and facilitation before the simulation is performed to counteract any possible confusion from a student perspective about what is expected of them (Hoffjan, 2005:70; Fouché & Visser, 2008:599).

Giroux and Pasin (2011:1246) identified the same time constraint problem in their study of a simulation on operations management education. They also found that students became frustrated with technical difficulties embedded in the simulation and that lecturers struggled to provide feedback and answer questions when the simulation took place outside of class time (Giroux & Pasin, 2011:1246). This, again, confirms the importance of clear instructions and facilitation as stated by Fouché and Visser (2008:599) before the simulation is performed. Another solution to the communication problems identified by Giroux and Pasin (2011:1246) is, when learning takes place outside the classroom, social media could be used as means of communication, as indicated earlier (paragraph 3.2.1.2, page 69).

In summary, all these studies acknowledged that the advantages of using simulations to enhance the student learning experience in audit education exceeded their limitations.

Table 3-6: Advantages and disadvantages of simulations

<i>Simulations</i>	
<i>Advantages</i>	• Create a positive attitude toward learning; • Inspire engagement in the learning process; • Encourage learning; • Provide opportunities for integration and application learning; • Bring an element of business reality to the classroom; • Reduce issues of slacking caused by traditional teaching methods; • Provide soft-skill practice that includes teamwork, collaboration, and interpersonal social skills; • Stimulate students and motivate them to increase their participation in a conventional classroom situation; • Increase the ability to recall factual knowledge; • Improve problem solving skills; and • Encourage active engagement in the learning process, which enhances learning effectiveness.
<i>Disadvantages</i>	• Time consuming and possible confusion from a student perspective about what is expected; • Frustration with technical difficulties embedded in the simulation and educators struggle to provide feedback and answer questions when the simulation takes place outside of class time.

(Source: Fouché & Visser, 2008:599; Giroux & Pasin 2011:1246; Hoffjan, 2005:63; Knechel, 1989:411-419)

Simulations can also form part of another method of active learning which is referred to as cooperative learning strategies (Nitkin, 2011:132). This form of active learning is discussed next.

Cooperative learning

Cooperative learning is defined as learning that is based on a small-group approach which holds students accountable for both individual and group achievement (Brown *et al.*, 2010:268). According to Hwang *et al.* (2005:153), cooperative learning is a structured and systematic instructional tool where small groups are required to work toward a mutual goal. Cooperative learning is also demarcated in educational terms as an active instrument which requires students to work in a group to accomplish a set of tasks (Moore, 2012:358). From these interpretations of cooperative learning, a definition can be formulated that it is a learning approach using small groups to complete a task that requires every individual in the group to aim to the same objective, whether it be in the form of a simulation or a game.

Diverse studies on the cooperative learning approach have been performed in accounting education. For example, a study by Hwang *et al.* (2005:151) investigated whether cooperative learning can expand the learning outcomes of students in a passive learning setting. A total of 172 accounting students from a major Hong Kong university participated in this study. The results found that students who were educated by means of a cooperative learning approach significantly outperformed those who were educated in a traditional lecture environment (Hwang *et al.*, 2005:151).

Another study was conducted at a medium-sized Midwestern university by Tanner and Lindquist (1998:139). In this cooperative learning venture, participants formed company groups that participated in a game of Monopoly. Each move represented a transaction that needed to be journalised, which brought about the completion of general ledgers and financial statements representing a one-year accounting cycle. Although all these activities could have been completed individually, Tanner and Lindquist (1998:152) noted that the combination of Monopoly with a cooperative learning approach provided numerous advantages to student learning.

Further studies into cooperative learning strategies are those of Fouché (2006:116) and Van der Merwe (2013:142). These researchers employed an accounting board game (Fouché, 2006:116) and an integrated case study and business simulation (Van der Merwe, 2013:142). The results of these cooperative learning projects indicated improved student learning and comprehension. These advantages, together with those identified by

Brown *et al.* (2010:271), include enhanced social skills, improved comprehension of academic content, allowance for student decision making, boosting students' self-esteem, promoting student responsibility and focusing on accomplishment for all group members.

Although cooperative learning has many advantages, several criticisms have been levelled at the model of grouping students together (Brown *et al.*, 2010:276). The main issues include that grouping students with heterogeneous abilities could hold back students with greater academic flair, and students with learning difficulties might not get the chance to advance their skills when aid is given by stronger students. However, combining students with different abilities can lead to maximum benefit by allowing them to learn from one another's weaknesses and strengths while developing skills, thus ensuring a shared responsibility toward learning (Brown *et al.*, 2010:276; Nitkin, 2011:132). Table 3-7 next summarises the advantages and disadvantages of cooperative learning.

Table 3-7: Advantages and disadvantages of cooperative learning

<i>Cooperative learning</i>	
<i>Advantages</i>	• Enhances social skills; • Improves comprehension of academic content; • Allows for student decision making; • Boosts students' self-esteem; • Promotes student responsibility; • Focuses on accomplishment for everyone in the group; • Allows students to learn from one another's weaknesses and strengths in developing skills that are lacking; and • Ensures a shared responsibility toward learning.
<i>Disadvantages</i>	• Grouping students with heterogeneous abilities could hold back students with greater academic flair; • Students with learning difficulties might not get a chance to advance their skills when aid is given by stronger students; and • Assessment difficulties due to freeloaders.

(Source: Author; Brown *et al.*, 2010:271,276; Nitkin, 2011:132; Tanner & Lindquist, 1998:152)

In conclusion, an active learning environment consisting of various student inclusive methods such as visual aids, case studies, simulations and cooperative learning strategies

can provide a variety of benefits or advantages for students studying any form of accounting degree. In light of the disadvantages of these methods, blended learning in the classroom might be the more suitable approach to follow to encourage student and lecturer interaction, create a more positive learning environment and, ultimately, bring about change to audit education.

3.2.2.3 Blended learning

Prior to the year 2000, little reference had been made to the term “blended learning” in educational practice (Bliuc *et al.*, 2007:231). Blended learning was described as being both simple and complex (Garrison & Kanuka, 2004:96). Ginns and Ellis (2007:53) viewed blended learning in its simplest form as a relationship between online and face-to-face learning, whereas Bliuc *et al.* (2007:233) described it as a mix of traditional (passive and active) and online teaching methodologies. These views of blended learning are somewhat unspecific, but are the most commonly used explanations of the term in all studies into this approach conducted at higher education institutions.

The complexities associated with blended learning encompass challenges with regard to its implementation and boundless design opportunities. For this reason, it is difficult to integrate traditional face-to-face learning with online learning in an attempt to exploit and complement each other and to form a continuum between these two approaches in education (Garrison & Kanuka, 2004:96). Nevertheless, Garrison and Kanuka (2004:95) indicated that online learning is infiltrating higher education, and educators are being persuaded to challenge ongoing assumptions of teaching and learning in higher education. Since 2004, blended learning has progressively been implemented in course delivery, and most higher education institution curricula include some method of online learning (Conduit *et al.*, 2013:116).

Numerous studies on blended learning and its effect on student performance have been conducted in business, accounting, biology and psychology education; however, in audit education, a lack of interest in the approach has been noticed, despite the ongoing call for incorporating blended learning strategies in the audit classroom (Arbaugh *et al.*, 2009:71; Bliuc *et al.*, 2007:231; Conduit *et al.*, 2013:116; Cox *et al.*, 2013:651). Gaffney-Rhys and Jones (2008:12) support this in their study of social media use in a higher education setting, as discussed earlier (paragraph 3.2.1.2, page 69).

The literature identifies two main approaches in the use of blended learning; the first being in the form of pre-recorded lectures, followed by its application in assessment strategies. A study by Conduit *et al.* (2013:116) focused on the development of a blended learning model

to enhance lecture delivery. They introduced the use of an online learning system for lecture preparation and changes to assessment, including formative and summative online quizzes. These forms of assessment, as variables affecting the audit teaching-learning environment, are discussed in detail later (paragraph 3.2.3, page 97). Cox *et al.* (2013:651) highlighted students' perceptions of the use of pre-recorded lecture models and their advantages to face-to-face time with students. According to the findings, students believed that joining pre-recorded lectures with class exercises allowed them to engage actively in the learning process and develop better comprehension of the subject content (Cox *et al.*, 2013:651). In addition, these students perceived the use of pre-recorded lectures as an approach to learning that assists them in better information recall, understanding, application, analysis and integration of the subject content, in contrast with a traditional, passive methodology (Cox *et al.*, 2013:651).

Conduit *et al.* (2013:116) elaborated on the first approach to blended learning and its advantage by arguing that online delivery is particularly suited for content distribution because it allows students to work through the course content at their own pace and at a time that is most convenient to them.

Cox *et al.* (2013:652) advocated the use of pre-recorded lectures by stating that they can be downloaded and viewed by students, allowing them to pause multiple times during the lecture and learn according to their own cognitive ability. These researchers further stated that face-to-face time can be used to facilitate active learning methods which will give students the opportunity to obtain comprehensive understanding of the course material (Cox *et al.*, 2013:652).

With regard to assessment, the introduction of online formative and summative assessment approaches to blended learning by Conduit *et al.* (2013:116) proved to be valuable in both student learning and satisfaction. In the study executed by Sadler (1998:77), online formative assessment, or pre-class assessment, was used to provide feedback to students on their understanding of the knowledge they obtained while watching the pre-recorded lectures and to identify possible weaknesses to be addressed in a face-to-face session. Following the actual lecture, an online summative assessment was completed by students, who indicated improved scores and content understanding.

While care must be taken not to overgeneralise the use of blended learning approaches in all fields of education, the audit education milieu in higher education institutions today should be able to accommodate some of these approaches in an attempt to improve audit education. The latter can be done by using various technological tools such as Video Scribe

and Go Animate to develop lectures that can be viewed by students before or after the face-to-face class session. This, in turn, can assist in establishing an effective teaching methodology which can be applied in audit courses at universities and other higher education institutions.

3.2.2.4 An effective teaching methodology in audit education

As stated in the introduction to passive learning techniques (paragraph 3.2.2.1, page 81), audit curriculum consists of robust volumes of information that need to be conveyed to students in the short period of time available in the actual audit classroom. Consequently, traditional teaching methodology, such as lectures, has been used to facilitate this knowledge-sharing session between the lecturer and the student. Although audit lecturers have admitted to the limitations of using a passive learning approach and to the advantages of applying active and blended learning techniques, the literature conveys that audit lecturers in general still make use of passive techniques mainly due to time constraints.

According to the literature cited in this chapter, there is no fixed method or consensus on the methodology to be followed in teaching auditing at universities and other higher education institutions (paragraph 3.2.2.1, page 81 to paragraph 3.2.2.3, page 91). Indeed, some methods are more suitable than others, and each method comes with its own advantages and disadvantages. Therefore, audit educators should seek to mobilise a methodology that would not only enhance student understanding of the audit subject content, but also develop important skills such as critical thinking, problem solving and other soft skills required to enter professional practice after graduation.

The teaching methodology that audit lecturers decide to apply should not be confined to time constraints and the personal characteristics of the lecturer, such as stagnation and stubbornness. The lecturer then, who is seen as the most important variable in the overall teaching-learning environment, should be the one to initiate the change in the approach to audit education. Table 3-8 on the next page illustrates how the audit lecturer could apply active and blended learning methodologies in audit education. By exploiting the advantages of these methodologies, the student learning process is enhanced and an effective teaching methodology is developed in the audit classroom. These examples are provided by stating some of the techniques the author applies in the classroom setting.

Table 3-8: Active and blended learning in the audit classroom

Teaching methodology	Application in the audit classroom
Visual aids	The following visual aids can be used by the audit lecturer to demonstrate concepts in the audit subject and, in turn, assist students in understanding, learning, obtaining interest and retaining knowledge: <i>Source documents</i> – Show students the actual source documents such as invoices, loan contracts, bank statements, etc., which are used by auditors as audit evidence. In this way, students can obtain a better understanding of the audit evidence requirements in terms of ISA 500 – Fundamental principles of audit evidence. <i>Engagement letters</i> – Allow them to view and read through an actual audit engagement letter. This would assist students in mastering the concepts of ISA 210 – Acceptance and continuance of audit engagements. In doing so, they will be able to visualise the content requirements of an engagement letter. <i>Audit reports</i> – Distributing examples of the different audit reports which could be issued by the auditor in practice, would aid in understanding the requirements of the many ISAs on audit reporting. In doing so, students will be able to picture the content requirements of these reports. <i>Working papers</i> – Allow students to complete actual working papers and subsequently evaluate the technical content of these working papers against the criteria set in ISA 230 – Audit documentation. This will enhance the students’ ability to understand and retain knowledge.

Table 3-8: Active and blended learning in the audit classroom (continued)

Teaching methodology	Application in the audit classroom
Case studies	By providing them with case studies on fictitious client information during the face-to-face session, students are given the opportunity to master a variety of audit concepts and, in turn, increase their critical thinking, problem solving, communication and analytical skills. These case studies could include information such as: <i>Client background information</i> – Students can use this information to gain understanding of the entity and its environment and then to identify and assess the risks of material misstatement. In doing so, students will gain insight into the requirements of ISA 315 and will then be able to apply these requirements in examinations and actual audits.
Simulations	The audit lecturer could use simulations in the audit classroom to create a positive attitude toward learning the audit subject, to inspire engagement in the learning process and to encourage learning. The following could be simulated in the audit classroom: <i>Accounting processes (cycles)</i> – By simulating, for example, a sales process at an entity, students are presented with the opportunity to work through the various steps in this process, actually perform the controls related to the process, and identify weaknesses in the process. <i>Performing an audit</i> – By providing them with the opportunity to perform an actual audit in terms of the various audit subject content requirements, they can engage in the learning process and actually apply the theoretical concepts included in the audit curriculum to an actual scenario.

Table 3-8: Active and blended learning in the audit classroom (continued)

Teaching methodology	Application in the audit classroom
Cooperative learning	By allowing them to partake in the case studies and simulations in groups rather than individually, students are assisted in enhancing their social skills, deepening their understanding of academic content, boosting their self-esteem and promoting responsibility.
Blended learning	The audit lecturer could apply blended learning approaches in various ways in order to actively engage students in the learning process and help them to improve information recall, understanding, application, analysis and integration of the subject content. Some examples are: <i>The use of Go Animate</i> – The lecturer could use this tool to create a video in an animation format that explains the concept of materiality as stipulated in ISA 320. Students can watch the video after the lecture to refresh these concepts before studying for examinations. <i>The use of Video Scribe</i> – This tool allows the audit lecturer to pre-record a lecture and to draw and write while doing so. Students then watch this video with handwritten drawings that clarify a concept while listening to the lecturer’s explanation. <i>The use of Hot Potato</i> – With this tool, the audit lecturer can formatively assess students’ understanding by means of various methods, for instance, cross-word puzzles and word mazes. <i>The use of Trainer Bubble</i> – With Trainer Bubble, the lecturer can test students’ understanding by means of games such a “Who Wants To Be a Millionaire” and “The Weakest Link” which can be adapted to the specific subject content.

A variety of other technological tools can be used by the audit lecturer, for example: *Toondo*, *Glogster*, *Teded*, *Screenr* and *Video Ant*. These tools provide the lecturer with several methods which could be incorporated into teaching methodology to further the use of blended learning. The examples in table 3-8 are not an exhaustive list of how active and blended learning approaches could be applied in the audit classroom. Instead, the audit

lecturer can use this list as a starting point in applying these methodologies when teaching auditing at universities or other higher education institutions.

The remainder of this chapter focuses on assessment and feedback approaches, together with the physical audit classroom as variables which affect the overall audit teaching-learning environment.

3.2.3 Assessment and feedback approaches

Assessment, in general, is described by the Oxford Dictionary (1970:110) as “the action of assessing an amount” or “assigning a value to something”. In an educational context, Sadler (1989:120) viewed the term to denote any appraisal of a student’s work or performance. Taras (2005:466) warned that the term “assessment” should not be confused with the term “evaluation,” as it is customarily done in the educational circles. According to this researcher, assessment refers to the judgment of students’ work, whereas evaluation refers to judgment regarding courses or course delivery or to the process of making these judgments (Taras, 2005:467). Gawe *et al.* (2012:276) concur by stating that the action of assessment fundamentally concerns itself with continued achievement of learning objectives by students, whereas evaluation is the traditional action of testing knowledge by assigning a grade to a student’s knowledge about the subject content.

Assessment can, therefore, be defined as an ongoing process throughout an instructional period such as a semester at a university to monitor a student’s performance and to provide them with the information (i.e. feedback) concerning their progress. This would give them control of their learning and aid in decision making to prepare them for their evaluation. Evaluation is distinguished from assessment as an action that is performed usually at the end of, or during, an instructional period in the form of examinations, tests or final projects which are graded. These two actions have opposing characteristics, but both must be applied by the lecturer to ensure success in the other. Several researchers in the education environment have labelled these two actions as *formative assessment* (the ongoing process of assessment and feedback that takes place before the evaluation) and *summative assessment* (the evaluation) (Gawe *et al.*, 2012:276; Lasley & Ornstein, 2004:496-497; Muijs & Reynolds, 2007:266).

With regard to accounting education specifically, it was noted in chapter 1 (paragraph 1.1, page 1) that the approach in assessment and feedback methods currently applied at universities or other higher education institutions is summative in nature. Students are required to sit down for written examinations, which are subsequently graded to determine

their level of success in mastering the subject content – very little emphasis is placed on the importance of using formative assessment approaches to enable students to successfully apply their knowledge in a summative assessment (Siegel *et al.*, 1997:217; Steenkamp & Von Wielligh, 2011:9).

The following paragraphs (paragraph 3.2.3.1, page 98 and paragraph 3.2.3.2, page 102) discuss formative and summative assessment and how they can be applied by audit lecturers to bring change to audit education.

3.2.3.1 Formative assessment

Formative assessment takes many forms and shapes. Lasley and Ornstein (2004:496) identified several methods of formatively assessing student knowledge and progress in the subject content. These include the use of non-graded tests administered throughout the term, homework assignments, student–lecturer conferences, parent–lecturer conferences and informal observations made by the lecturer in the classroom (Lasley & Ornstein, 2004:496). Brown *et al.* (2010:271) add the use of daily quizzes in the classroom.

Formative assessment not only assists lecturers in monitoring students' level of understanding of the learning content, but also supports them in gathering valuable information about their teaching. In this way, lecturers can improve their lecturing skills which would, ultimately, improve student comprehension and learning (Gawe *et al.*, 2012:283; Moore, 2012:235). The objectives of this assessment method are, therefore, both student- and lecturer-centred. Gawe *et al.* (2012:282) set out these objectives as follows:

- To guide improvement;
- To identify difficulties and give students the opportunity to correct their errors;
- To obtain an understanding of students' knowledge on a specific topic before the lecture;
- To provide lecturers with feedback on their lecturing ability; and
- To add variety to the learning experiences of students.

These student- and lecturer-centred objectives of formative assessment are discussed next. Examples are provided of how formative assessment can be applied in the audit classroom in an attempt to meet the objectives of this assessment approach.

Objective 1: To guide improvement

The lecturer applies formative assessment merely to obtain information about a student's understanding of the subject content, primarily without grading the tasks or questions posed to the student (Moore, 2012:235). This information is then used to give students feedback, indicating what needs to be done to fill any shortcomings identified in the formative assessment (Gawe *et al.*, 2012:282).

Example 3-4: To guide improvement

After the lecture has been completed, the audit students should answer a set of questions based on the content of the lecture. These questions should then be formatively assessed by the audit lecturer or the other audit students attending the lecture. The audit students should receive feedback on their achievement in obtaining the correct answers to the set of questions, together with a guideline on what they can do to improve their achievement.

(Source: Author)

Objective 2: To identify difficulties and give students the opportunity to correct their errors

Students regularly obtain below average marks and do not understand what they are doing wrong or where they are missing the link between meeting the assessed objective (learning outcome) and their understanding of the required knowledge. Gawe *et al.* (2012:282) mentioned that students often struggle on after obtaining these marks without the know-how to correct their errors. Lecturers should assist students in identifying their strengths (i.e. the information that they have an understanding about), and their weaknesses (i.e. where they are going wrong) and, consequently, provide them with feedback on how they can correct their misunderstanding of the information (Brown *et al.*, 2010:323). This assessment objective is also referred to as diagnostic assessment (Brown *et al.*, 2010:323, Gawe *et al.*, 2012:282).

Example 3-5: Diagnostic assessment

If audit students are asked to identify the risk of material misstatement at the overall financial statement level in assessments, and they frequently struggle do this, the audit lecturer should approach and assist them in obtaining an understanding of how to identify these risks.

(Source: Author)

Objective 3: To obtain an understanding of students' knowledge on a specific topic before the lecture

The lecturer should administer assessment before the lecture starts. This will aid in assessing the students' knowledge on the specific topic before instruction starts (Moore, 2012:234). This assessment objective is frequently referred to as placement (Brown *et al.*, 2010:323; Moore, 2012:234) or baseline assessment (Gawe *et al.*, 2012:282). In performing this assessment, lecturers:

- Can identify students who do not have the prerequisite knowledge level to start the new topic. The lecturer can provide these students with additional information to help them reach the required knowledge level (Brown *et al.*, 2010:323; Moore, 2012:234);
- Can identify at what knowledge level the lecture should be to avoid boring the students and to capture and keep their attention from the start (Brown *et al.*, 2010:323; Gawe *et al.*, 2012:282; Moore, 2012:234);
- Can use the results as a baseline to measure progress (Brown *et al.*, 2010:323); and
- Can use the results to determine the knowledge level of students entering another year of studying the subject before commencing with new content that requires prerequisite knowledge obtained in a prior year of study (Gawe *et al.*, 2012:282).

Example 3-6: Baseline assessment

Before starting the lecture on the topic of materiality, the audit lecturer could administer a set of questions to students to determine their understanding of evaluating the risk of material misstatement at the overall financial statement level, because this knowledge is required to successfully grasp the concept of materiality.

(Source: Author)

Objective 4: To provide lecturers with feedback on their lecturing ability

General gaps in students' knowledge base concerning a specific topic usually indicate that the lecturer did not apply a successful teaching methodology (Gawe *et al.*, 2012:282). Lecturers therefore should employ alternative methods to fill these gaps (Gawe *et al.*, 2012:282).

Example 3-7: Lecture ability

If the audit lecturer identifies that the majority of the audit students in the class do not grasp the whole audit process, which has been explained previously by means of a passive learning approach (i.e. lecture), the lecturer could switch to applying visual aids such as diagrams and flow charts or give an audit simulation assignment to enhance the students' understanding of the whole audit process.

(Source: Author)

Objective 5: To add variety to the learning experiences of students

When the lecturer varies assessment methods, more effective and enjoyable learning and teaching are created in the classroom (Gawe *et al.*, 2012:282). Furthermore, by continually applying different assessment techniques the students are stimulated and motivated to take charge of their own development (Gawe *et al.*, 2012:282).

Example 3-8: Adding variety to the learning and teaching experience

The audit lecturer could assess the students' understanding of various topics by means of homework assignments, term tests, group projects, and individual assignments.

(Source: Author)

To summarise, formative assessment in all its ways and means of application will have a positive impact on the learning process of students and the lecturing experience of the lecturer. The audit lecturer should therefore use this ongoing form of assessment to ensure that the students understand the subject content of auditing. If not, the lecturer should obtain the reasons for this and provide remedial feedback to students to assist them in reaching the required knowledge level. It is further important for audit lecturers to ensure that they do not use the same teaching and assessment methods throughout the period of learning and bore students in the classroom. If they should fail to do so, the lecturers would not be able to keep students' attention and ensure that the learning outcomes to be evaluated in the summative assessment will be met.

Summative assessment and its use in the audit classroom are discussed next.

3.2.3.2 Summative assessment

In contrast to formative assessment, the lecturer applies summative assessment at the end of a topic or an entire course (Lasley & Ornstein, 2004:497). The lecturer collects information about the students' understanding of the subject content that has been lectured throughout a semester or term (Brown *et al.*, 2010:323). This is primarily done by means of a final examination or final project which is then graded on the grounds of which the lecturer concludes whether the student has mastered the subject content (Gawe *et al.*, 2012:281; Lasley & Ornstein, 2004:497). Summative assessment sets out to determine, by means of formal observation scales, ratings, or standardised tests, examinations and projects, whether the student has met the learning outcomes.

As discussed in chapter 1 (paragraph 1.1.3, page 7), after completion of their formal training at a university or other higher education institution, all aspiring CAs will write two board examinations set by SAICA (2010:6). The fact that these examinations are summative in nature further stresses that audit lecturers should apply formative assessment methods more frequently, preferably throughout the whole formal training process. In this way, they will ensure that students obtain a holistic view of auditing and are equipped with the ability to apply their theoretical knowledge, not just when completing summative assessments, but also when entering audit practice. Assessment as a variable affecting the audit teaching-learning environment is an imperative consideration if audit lecturers are to bring change to the methods they are currently applying in assessing the knowledge of their students.

3.2.4 Summary on the audit lecturer

In defining the audit lecturer as the most important variable effecting change in audit education today, a variety of factors or other variables that the lecturer has control over were explored. This set the background to the process of answering the call for transformation in audit education.

The *general characteristics* of effective lecturers were identified and then their effect in audit education were emphasised. The following conclusions were reached:

- It is vital that audit lecturers consider their personality and continue to develop attributes that form part of their personality so as to improve student learning;
- Audit lecturers should be able to communicate and incorporate social media as a means of communication between themselves and their students;

- Audit lecturers should not just motivate students by applying methods which support intrinsic rather than extrinsic motivational behaviours, but they should be more student oriented and responsive to student needs and concerns;
- Audit lecturers should show commitment to a process of CPD with the aim to remain knowledgeable and well informed, be able to discuss recent developments in the subject field and, finally, be perceived as respected and competent lecturers in the eyes of their students; and
- Audit lecturers should have well-prepared lectures and be open to the use of new technologies such as Prezi in presenting their lectures.

Furthermore, it was established that audit lecturers should apply a *teaching methodology* that will meet the audit students' needs, enhance student understanding of the audit subject content, develop important skills such as critical thinking, problem solving and other soft skills, and not just apply methods to suit their own needs and preferences. Finally, it was concluded that audit lecturers should assess the knowledge level of students on a continuous basis (*formative*) and not only in a *summative evaluation*.

The process of fostering change in the approach which is followed currently in the audit classroom therefore needs to start with the audit lecturer and should entail improvement of (i) general characteristics; (ii) teaching methodologies; and (iii) methods of assessment and feedback. All of these aspects have a direct impact on the audit classroom, which is discussed next.

3.3 Defining the audit classroom

The second variable in the audit teaching-learning environment which affects change in audit education is the physical classroom and its immediate environment.

Moore (2012:76) defined the classroom as a milieu that sets the tone for learning and described it as a setting that includes learning communities where students are friends and work hard to obtain new knowledge about a subject that they have an interest in. Lizzio *et al.* (2002:27) mentioned that the classroom is a learning environment where students are asked to learn, whereas Fouché (2006:45) demarcated the classroom as a milieu that consists of both the physical classroom setting and the environment or atmosphere surrounding the physical classroom. Thus, the classroom is seen as an environment that encapsulates both the physical substance and the atmosphere surrounding the classroom, and which is rich in learning and where knowledge is transferred from the lecturer to the student.

To date, research in this area has been vast. An abundance of literature is available about the physical classroom setting and its atmosphere, stating how lecturers and school teachers should set up the classroom so as to enhance student learning, comprehension of subject content and student motivation to attend class. Some of these studies and their findings are elaborated on in paragraph 3.3.1 that follows.

3.3.1 Reflection on some previous research

Several studies have been performed in connection with the audit classroom, as noted in the introduction to this variable (paragraph 3.3, page 103). Fisher and Waldrup (1997:41) assessed the culturally sensitive factors in the teaching-learning environment of science classrooms at the Curtin University of Technology. They noted that factors such as gender equity, collaboration, risk involvement and competition affect the student's learning experience when inside the classroom (Fisher & Waldrup, 1997:46). These researchers further investigated the effect of teacher authority, modelling, congruence and communication within the classroom environment. They found that all of these factors have an impact on effective learning and that lecturers should consider them when setting up the classroom to successfully achieve the learning outcomes (Fisher & Waldrup, 1997:46).

Church *et al.* (2001:43) studied the effect of undergraduates' perceptions of their classroom environment, on their adoption of mastery goals (long term), performance goals (short term) for the course, their graded performance, and intrinsic motivation. The results of the study indicated that (Church *et al.*, 2001:43):

- Mastery goal achievement is dependent on the presence of lecturer engagement and the absence of evaluation;
- Performance goal achievement is dependent on the presence of evaluation;
- The classroom environment therefore has an influence on the adoption of a goal achievement attitude within students; and
- This goal achievement attitude has a direct impact on the graded performance and intrinsic motivation of students.

Fouché (2006:46) contended that the lecturer's personality, motivation, expectations, teaching methodology, student personality and emotional environment affect the classroom atmosphere and, ultimately, student learning. He emphasised that lecturers who teach subjects in an accounting education environment should give more consideration to the

physical classroom setting (Fouché, 2006:47). Richard (2009:1) adds motivation, self-confidence and language anxiety on the part of the student to the list of variables that affect the classroom atmosphere. This researcher also highlighted that the knowledge, skills and attitude that the lecturer brings to the classroom will affect the classroom atmosphere and, in turn, student learning, subject comprehension and motivation (Richard, 2009:1).

Probably the most researched area regarding the classroom setting is that of experiential learning. This teaching-learning method and its impact on the audit classroom are elaborated on next.

3.3.2 Experiential learning and its impact on the audit classroom

Experiential learning is defined as a cycle or process of learning that involves exposing the student to a real-life situation (Beaudin & Quick, 1995; Boud & Walker, 1992:165-166; Kolb, 1984:22). Kolb (1984:2) stated that experiential learning “offers the foundation for an approach to education and learning as a life-long process that is soundly based in the intellectual traditions of social psychology, philosophy, and cognitive psychology”.

Kolb (1984:31) described experiential learning as a four-part process, where the students are asked to involve themselves in a new experience (concrete experience), actively reflect on that experience, conceptualise that experience (forming abstract concepts) and integrate it with past experiences (testing it in new situations). Therefore, in applying experiential learning in the classroom, students will be exposed to new methods of gaining understanding of the subject content (new experience), have the opportunity to reflect on what they have learned, be able to gain cognitive understanding of what they have learned (conceptualise the experience) and, finally, be able to apply what they have learned in an actual situation such as practice or examinations (testing it in new situations). Kolb (1984:44) stated that, in order for students to do this, there should be a link not only between the theory and practice, but also between the classroom and the future career of the students, because the classroom should prepare the student for practice.

Slabbert *et al.* (2009:55) argued that the profession in which students will find themselves after graduation should be incorporated into the learning task design, which is designed before every learning opportunity by the lecturer. This requires that an actual challenge – one that the students would experience in their profession – be imitated in the classroom (Slabbert *et al.*, 2009:55).

Beaudin and Quick (1995) accentuated that education has changed from formal abstract education to more experienced-based education. Slabbert *et al.* (2009:3) concur by stating

that the world we live in is changing fast and that education should keep up with this change. This paradigm shift was also noted by a variety of researchers from an accounting and audit education perspective, even before the twentieth century, as highlighted in the introduction to this thesis (paragraph 1.1, page 1).

Adler and Milne (1997b:110-116) highlighted the fact that accounting courses still overemphasise the technical substance of the various accounting subjects, more specifically auditing, which does not create adequate scope for the development of skills that audit students need to possess in the auditing arena. Barac (2012:48) explained that, although a formal education approach has been followed for a number of years, the current economic environment has shifted and continues to revolutionise; therefore, the need for change in the approach to teaching auditing is stressed to ensure that audit education and the approach followed to prepare audit students for practice remain relevant. This call for change in the audit classroom is also highlighted by SAICA (2010:3-4) in their competency framework.

In conclusion, audit lecturers should attempt to alter the audit classroom setting by implementing more experiential learning techniques such as, but not limited to, simulations and games. In this way, audit practice can be replicated in the classroom. This claim is predominantly pertinent to the study of auditing where students learn through theory and practice when they perform audits (Chiang *et al.*, 2011; Groomer *et al.*, 1992:48-50; Helliard *et al.*, 2009:185; Pillsbury 1993:130-135). In this regard, prior research has found that experiential learning can be an effective approach for improving lecturer effectiveness in audit (Siegel *et al.*, 1997:217).

Altering the audit classroom to replicate practice will ensure that the audit classroom will evolve into being a rich teaching-learning environment for both the lecturer and the student. Class attendance will increase, students will have a positive attitude, their ability to recall knowledge and solve problems will be enhanced, they will have the opportunity to practise soft skills and, ultimately, experience auditing as it is performed in practice (Fouché & Visser, 2008:599; Giroux & Pasin 2011:1246; Hoffjan, 2005:63,70; Knechel, 1989:411-419).

The lecturer, on the other hand, will be given opportunities for integration and application learning, because students will be actively engaged in the learning process, enhancing learning effectiveness in the end (Giroux & Pasin 2011:1246; Hoffjan, 2005:63,70; Knechel, 1989:411-419). When lecturers bring change to the audit classroom, they will not only enhance student learning, but also bring the much-needed change to the approach to audit education.

3.3.3 Summary of the audit classroom

The audit classroom is the environment where audit students should not only learn the subject content of auditing, but also be able to apply themselves in practice after graduation. Various factors, such as *gender equity*, *collaboration*, *risk involvement*, *competition*, *motivation*, *self-confidence of the teacher*, *student personality* and, finally, the *knowledge*, *skills* and *attitude* of students, are factors which affect the general classroom setting. It is imperative that audit lecturers set the audit classroom as a milieu that *replicates audit practice* by applying *experiential learning* techniques such as simulations and games. This could contribute in effecting change in audit education.

3.4 Chapter summary

In the introduction to this chapter, the lecturer in general, together with his or her ability to control the majority of the other variables affecting the audit teaching-learning environment, was argued. Concerns were stated as to the immense pressure that accounting lecturers, more specifically audit lecturers, are experiencing in delivering students who possess the necessary skills and technical ability to function effectively in practice after graduation. The call for change in audit education was motivated, which included arguments on how the audit lecturer can employ all the relevant variables to initiate this change.

Following the introduction to this chapter, the audit lecturer and audit classroom were discussed as variables which could bring about this change. The audit lecturer was defined and the *general characteristics* of an effective lecturer were identified by applying *attribution theory*. These included the *character and personality* of lecturers, lecturers' *communication skills*, the *motivation and feedback approaches* followed by effective lecturers, their *commitment to CPD* and, finally, the importance of *well-prepared* and *technologically advanced lectures*.

It was concluded that audit lecturers should consider their character and personality and continue to develop attributes that form part of their character so as to enrich student learning. Furthermore, it was noted that audit lecturers should be able to communicate and incorporate social media as a means of communication between themselves and their students. It was stated that audit lecturers should not only motivate students by applying methods that support intrinsic rather than extrinsic motivational behaviours, but also be more student oriented and responsive to student needs and concerns.

The importance of audit lecturers' commitment to CPD was highlighted. The aim of this commitment was defined as remaining knowledgeable, being well informed, having the ability to discuss recent developments in the subject field and being perceived as respected and competent lecturers in the eyes of their students. It was argued that audit lecturers should present well-prepared lectures and be open to using new technologies in their lectures. In addition, it was indicated how the audit lecturer could apply the characteristics of an effective lecturer in order to bring change to the audit classroom.

Different *teaching methodologies* were discussed next. Each of these methodologies were explored separately under the headings *passive*, *active* and *blended learning*. The general use, advantages, disadvantages and relevance of each method with regard to the audit classroom were elaborated on.

An attempt was then made to establish the elements of an *effective teaching methodology* which would be able to bring change to the audit classroom. The literature did not seem to point to any fixed method or to consensus with regard to a method, but some teaching methodologies, such as active and blended learning approaches, were found to be more suitable than others. However, it was established that audit lecturers should seek to mobilise the method that would not only enhance student understanding of the audit subject content, but also develop important skills such as critical thinking, problem solving and other soft skills required for professional practice. It was further stressed that the lecturer's decision on which methodology to apply should not be confined to time constraints and factors affecting the lecturer such as stagnation and stubbornness.

Following the investigation on teaching methodologies, *assessment* and *feedback* methods were deliberated. The difference between assessment and evaluation were clarified, as well as how assessment in audit education is currently being performed. The two predominant practices of assessment and evaluation were identified, i.e. *formative* and *summative assessment*. These two assessment methods, their impact on student learning, and then on audit education were discussed, supported by various examples.

Finally, a summary was provided of the definition and all the variables considered in defining the lecturer, which can start the process of changing audit education.

A discussion followed of the audit classroom as a variable affecting the audit teaching-learning environment. Attention was paid to the formal definition of a classroom as well the description provided by educational researchers. In an attempt to define the audit classroom, as well as state how this environment can bring about change in audit education, previous

research on the classroom environment was set out. This was followed by exploring the use of *experiential learning* and its applicability in the audit classroom. It was argued that lecturers should incorporate this form of learning into the classroom, because it will contribute to both the lecturers' and students' teaching-learning experience and, ultimately, bring change to audit education. A summary on the findings was also provided.

To conclude, Leonard Roy Frank stated that “wise teachers create an environment that encourages students to teach themselves” (Frank, 2014). From the findings of this chapter, it is clear that audit lecturers will only be as wise as their character and personality allow them to be, the extent to which their teaching methodologies enrich student learning, and how their assessment and feedback approaches encourage students to teach themselves.

The audit student as a variable in the audit teaching-learning environment is discussed in the chapter that follows.

Chapter 4

The audit teaching-learning environment: The audit student

“The only thing that interferes with my learning is my education.” – Albert Einstein

4.1 Introduction

SAICA (2014a) explained to hopeful students that becoming a CA is their gateway to a stimulating and thrilling career, global mobility, flexibility and great earning probability in a business field of their choice. Aspiring CAs are further encouraged by SAICA (2014a) stating that “[y]ou must work consistently and seek assistance if you experience any challenges with your studies. Always aim to obtain good results all around. Perseverance and effort will help you achieve your end goal”.

These words, although inspiring and motivational to any student pursuing a career as a CA, is not enough to ensure that students successfully complete their formal studies at a SAICA-accredited university or other higher education institution. The majority of students pass the first board examination, the Initial Test of Competence (ITC), set by SAICA (2014b) on their first attempt, as seen from pass rates of 86% in 2013 and 81% in 2014. However, from then on, students in audit practice still struggle to apply theoretical knowledge which, based on these high pass rates, had to have been successfully conveyed to students. Chapter 1 (paragraph 1.1, page 1) highlighted the reason for this gap between theory and practice, namely that the current approach followed at higher education institutions to develop CA students creates a knowledge-to-practice application barrier, specifically in the audit field. It was also noted that, to overcome this barrier and facilitate change to the approach, the audit student as a variable in the audit teaching-learning environment needs to be taken into account (paragraph 1.1, page 1).

The purpose of chapter 4 is therefore to explore the audit student as a variable in the audit teaching-learning environment effecting change in audit education. This addresses the third secondary research objective of this study, as indicated in chapter 1 (paragraph 1.5, page 15). The remainder of this chapter focuses on defining the audit student. Attention will be paid to the factors that have an impact on audit students’ ability to successfully complete their studies and that enable them to apply their theoretical knowledge obtained at tertiary

level in practice. This chapter concludes with a summary on the findings of this chapter and a discussion on how these findings could bring about change in audit education.

4.2 Defining the student in the audit teaching-learning environment

In the introduction to this study (paragraph 1.1, page 1), a variety of factors that affect the audit student as a variable in the audit teaching-learning environment were identified by several researchers in the wide spectrum of accounting pedagogies. Barac (2012:52) and Hall *et al.* (2004:490-492) identified the *learning approaches* that students apply to gain understanding of what they are studying as a factor that affects students' ability to learn, retain and recall the audit subject content. Finally, the *biographical factors (endogenous)* and *other barriers (exogenous)* to learning which audit students are exposed to were identified as obstacles to student achievement (Entwistle *et al.*, 2002; Fouché, 2006:42; Guney, 2009:57; Van der Merwe, 2013:90).

Next, the impact of these factors is explored in general in education, followed by a discussion on their impact on the audit student specifically. This is done under the following headings:

- Approaches to learning – paragraph 4.2.1, page 111; and
- Biographical factors and other barriers – paragraph 4.2.2, page 124.

4.2.1 Approaches to learning

No two individuals think exactly alike, nor do any two persons learn in the same way (Brown *et al.*, 2010:159). Moore (2012:52) posited that students learn by applying different learning styles and that the selection of the *learning style* depends on the student's *cognitive style* of learning. Defining learning style and cognitive style is not an easy task (Cassidy, 2004:420). According to Cassidy (2004:420), these terms are often used interchangeably, whereas they are afforded distinct and diverse definitions at other times.

Cognitive style is described by Allport (1937, as cited by Cassidy, 2004:420) as a person's usual or typical mode of problem solving, thinking, perceiving and remembering. Riding (1997:42) viewed cognitive style as an individual's consistent approach to organising and processing information. Witkin *et al.* (1977:15) characterised cognitive styles as individual differences in the way people perceive, think, solve problems, learn and relate to others. In simple educational terms, cognitive styles can be defined as the way in which a

student's brain processes information and, in so doing, assists the student in remembering, thinking, and problem solving.

On the other hand, learning style can be seen as the concept that differentiates between people in regard to the style of teaching or study that is the most effective for them (Pashler *et al.*, 2008:105). Moore (2012:52) defined the term as those methods that students apply in learning with which they feel most comfortable. The concept of learning style describes individual differences in learning based on preference (Kolb & Kolb, 2005:194). A learning style is, therefore, an ideal or preferred method of study.

An abundance of research has been conducted in the field of accounting education in general on various cognitive and learning styles that students apply in the learning process – all with one common finding, i.e. that students studying toward some sort of accounting qualification will perceive the learning process from different approaches (Fouché, 2006:38). Duff and Mladenovic (2014:1) stated that the learning approaches applied by students have vigorously been researched over the last four decades. As noted in chapter 1 (paragraph 1.1.2, page 5), Hall *et al.* (2004:490-492) identified two learning approaches followed by accounting students in general, namely the *deep learning approach* and the *surface learning approach*. These two approaches have also been researched by Chiang *et al.* (2011) in their study on whether a mini-case audit in an auditing course was perceived positively by students and led to heightened motivation of students, encouraging a deep approach to learning.

The literature pertaining to the various accounting pedagogies recognised the need to develop a better understanding of the learning approaches applied by students in order to improve their learning process and, ultimately, the education process. Hence, there is a deep-rooted body of research in the field of education in general which supports the notion that students' *characteristics, approaches to learning, their perceptions of their teaching-learning environment* and the *quality of the learning outcomes* are all interrelated and have a direct impact on one another and, consequently, on the learning process (Chiang *et al.*, 2011; Dart *et al.*, 2000:263; Duff & Mladenovic, 2014:3; Jackling, 2005:272).

A variety of models have been developed over the years to gain insight into the interaction between students' approaches to learning, their perceptions of their teaching-learning environment and the quality of the learning outcomes, with the most frequently cited model being the Biggs 3P model (Dart *et al.*, 2000:262; Jackling, 2005:272).

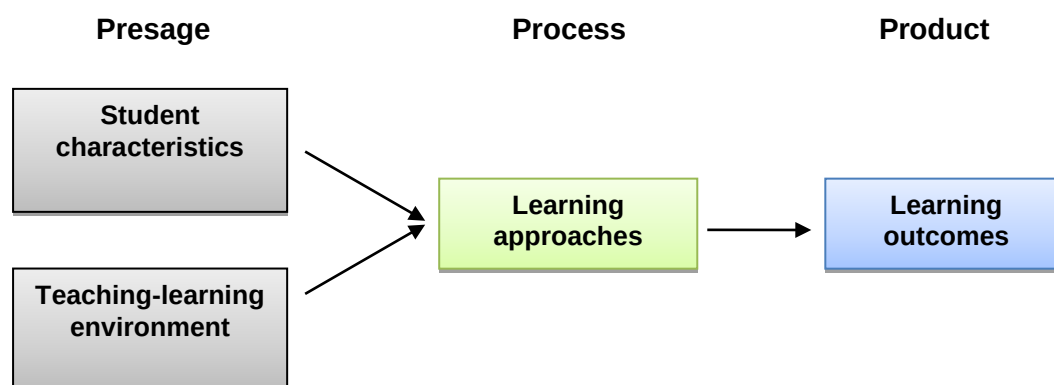
Dart *et al.* (2000:262), Jackling (2005:272) and Duff and Mladenovic (2014:1) described this model as a prototype that explains the connection between:

- Presage;
- Process; and
- Product factors in learning.

Presage factors include both student and lecturer characteristics. These factors exist before the student enters a learning state and include student characteristics such as conceptions of learning, prior knowledge, motivation, work habits, study skills, abilities, locus of control, perceived self-efficiency, learning style, social factors, cultural factors, gender, age, race and preferred approaches to learning (Dart *et al.*, 2000:262; Duff & Mladenovic, 2014:2; Jackling, 2005:273). Lecturer presage factors consist of the variables in the teaching-learning environment, which lecturers can control to some extent, such as lecture-specific characteristics, teaching methodology, assessment and feedback approaches, and course content or workload of the curriculum (Dart *et al.*, 2000:262; Duff & Mladenovic, 2014:3; Jackling, 2005:273).

Process factors result from the interaction between the lecturer and student presage factors and dictate the learning approach that students adopt, i.e. a deep or surface learning approach (Dart *et al.*, 2000:262; Duff & Mladenovic, 2014:3; Jackling, 2005:273).

Product factors refer to the quality of the learning outcomes that can either be quantitative or qualitative in nature and can be described as the consequences of learning (Abhayawansa & Fonseca, 2010:529; Dart *et al.*, 2000:264; Duff & Mladenovic, 2014:3; Jackling, 2005:275). The distinguishing factor between the qualities of learning outcomes is, on the one side of the spectrum, whether the focus of the learning outcomes is on how much has been learned (quantitative) or on obtaining meaning and understanding in addition to how much has been learned, i.e. how well something has been learned (qualitative) (Abhayawansa & Fonseca, 2010:529; Dart *et al.*, 2000:264; Jackling, 2005:275). Figure 4-1 illustrates the link between the presage, process and product factors in the learning process.

Figure 4-1: Biggs 3P Model

(Source: Biggs, 1989:11 – Adapted)

The Biggs 3P model and its application to accounting, and to audit education, are discussed next.

4.2.1.1 Learning approaches

As noted in chapter 1 (paragraph 1.1.2, page 5), a *deep learning* approach is followed when the student seeks an all-embracing embellishment of the study material, resulting in active organisation of the learning content (Dart *et al.*, 2000:262, Entwistle, 2001:595-598; Flood & Wilson, 2008: 227-229; Henning, 2013:13-14; Jackling, 2005:274). *Surface learning*, on the other hand, is where students study material by means of routine procedures such as repetition to memorise the learning content and to restate it later in an examination or orally given circumstance (Dart *et al.*, 2000:262, Entwistle, 2001:595-598; Flood & Wilson, 2008: 227-229; Henning, 2013:13-14; Jackling, 2005:274).

According to Duff and Mladenovic (2014:2), when following a deep approach, students are looking for meaning in the subject matter to critically relate it to other experiences and ideas. In contrast, students who apply a surface approach depend on memorisation and rote learning, and isolate the current matter being studied from any previous experiences or knowledge (Duff & Mladenovic, 2014:2).

Jackling (2005:274) noted that it has become the norm to link the surface approach to the rote memorisation of information, whereas the deep approach to learning has been described traditionally as where the students attempt to make a connection between what they are learning and previous knowledge or experiences by following a process of logical reasoning. Students who follow a deep learning approach attempt to gain deeper insight into the subject content in contrast with merely memorising the facts without any understanding

of what the information means or how to apply it in a scenario or actual situation (Jackling, 2005:274).

Biggs (1987:15) provided a summary of the characteristics of students who follow a deep or surface learning approach when performing an academic task. According to this researcher, a student who adopts a deep approach to learning (Biggs, 1987:15):

- Is interested in the task and feels enjoyment when performing the task;
- Searches for the meaning inherent in the task;
- Personalises the task, making it meaningful to own experience and to the real world;
- Integrates aspects or parts of the task into a whole (e.g. relates evidence to a conclusion) and sees relationships between this whole and previous knowledge; and
- Attempts to theorise about the task and draw conclusions.

On the other hand, a student who follows a surface approach to learning is described as an individual who (Biggs, 1987:15):

- Perceives tasks as an ultimatum to be met, a necessary burden if some other goal is to be reached (a qualification, for instance);
- Perceives the aspects or parts of the task as separate and unrelated either to one another or to other tasks;
- Is more concerned about the time the task is taking than learning from the task;
- Eludes personal or other meanings the task might have; and
- Depends on memorisation, attempting to reproduce the surface aspects of the task (the words used, for example, or a diagram or cue).

In conclusion, a student who follows a deep approach to learning seeks insight into the subject content and attempts to understand where the portion of the subject content fits into the bigger picture. Students who adopt a surface approach to learning perceive the subject content as a prerequisite task for which they have to memorise knowledge and later repeat what they have learned, without gaining any personal or deeper insight into what they are learning.

Various studies in the accounting education field have shown that students follow a surface learning approach despite the fact that higher education institutions around the world have called for students to learn with understanding and not just memorise the facts (Beattie *et al.*, 1997:1; Haggis, 2009:377). This call for change in the learning approach of aspiring accounting professionals is motivated by the variety of competencies which are expected of a professional accountant (Sharma, 1997:128).

A study by Beattie *et al.* (1997:1) indicated that, due to the nature of the tasks in the accounting field which, in its simplest form consist of recording transactions based on set algorithms, a surface approach to learning is adopted despite the call for deep approaches. This finding seems to fit a recurring theme in nearly 40 years of concentrated research activity in the field, according to Haggis (2009:377), and the question remains to be answered as to why so many students take a surface approach to learning.

Research into this phenomenon has shown that the use of a surface learning approach is an attempt by students to simplify the complexities of the subjects in the accounting field (Kember, 1996:341; Lucas & Meyer, 2003). Studies have also proven that students apply a surface approach as the first step in gaining understanding (e.g. Lucas & Meyer, 2003; Meyer, 2000:5). Other studies in general education have noted that students' personal characteristics such as perceived self-ability, locus of control, gender, age, race, conceptions of learning, and interest in and background knowledge of the material have a direct effect on their learning approach (Dart *et al.*, 2000:263).

The literature on students' characteristics claims that student perception of the teaching-learning environment are also related to student learning approaches and the quality of learning outcomes (e.g. Abhayawansa & Fonseca, 2010:527; Dart *et al.*, 2000:262; Eley, 1992:231; Entwistle & Tait, 1990:169; Jackling, 2005:271; Lizzio *et al.*, 2002:27; Trigwell & Prosser, 1991:251). Entwistle and Tait (1990:172) contended that students sometimes have a preferred orientation toward, or an intention to use, a deep or surface approach to learning in the light of their personal characteristics, but the way in which students perceive the teaching-learning environment will, ultimately, produce or prevent a specific learning approach. Hence, students' characteristics, their perception of the variables in the teaching-learning environment and the effect of their characteristics on their perception of these variables have an effect on the learning approach they adopt.

Adler and Milne (1997b:110-116), as noted in chapter 1 (paragraph 1.1.2, page 5), mentioned that audit students in particular apply a surface learning approach in making sense and understanding the audit subject, because the current approach to audit education

does not always allow students the opportunity to do differently. Chiang *et al.* (2011) argued that the current education process followed in accounting pedagogies is failing to actively involve students in the learning process; hence, students develop the tendency to follow a surface approach which negatively affects the quality of learning outcomes.

From these findings, it can be concluded that the current approach in accounting education, and audit education in particular, fails to engage students in the learning process and has an effect on students' perceptions of the teaching-learning environment. The variables of the audit teaching-learning environment such as lecturer characteristics, teaching methodologies, assessment and feedback approaches, subject content and workload identified earlier in this chapter (paragraph 4.2.1, page 111) will all have an effect on the approach that students apply in learning audit. These variables and their effect on the audit student's approach to learning are discussed next.

4.2.1.2 The teaching-learning environment and learning approaches

Several studies in accounting and educational research in general have indicated that students' perceptions of the teaching-learning environment have a direct impact on the learning approach they choose to follow. Some of these studies and their findings are discussed below.

Lizzio *et al.* (2002:27) conducted research on university students' perceptions of the learning environment and academic outcomes. By means of a variety of statistical measures, they found that students' perceptions of the variables affecting the teaching-learning environment, such as lecturer characteristics, assessment and feedback approaches, teaching methodologies and the subject content, all have an impact on the learning approach selected by students. The results of this study indicated that (Lizzio *et al.*, 2002:43):

- Students' perception of subjects that have a *heavy work load* (subject content) tended to lead them to follow a surface learning approach. There was no such relationship found between students' perceptions of appropriate workloads and a deep learning approach;
- Students' perceptions of inappropriate *assessment* and *feedback* approaches influenced them toward applying a surface learning approach, whereas students' perceptions of appropriate assessment and feedback approaches resulted in their adopting a deep approach; and

- Students' perceptions of good-quality teaching (*lecturer characteristics* and *teaching methodologies*) led students to follow a deep approach, whereas low-quality teaching resulted in students' applying a surface approach.

Research by Entwistle and Tait (1990:169), Trigwell and Prosser, (1991:251) and Eley (1992:232) in the early 1990s confirm the findings of Lizzio *et al.* (2002:43). These studies found that students' perceptions of subjects with heavy workloads tended to result in their adapting to a surface learning approach. In addition, Eley (1992:240) identified the following student perceptions of the teaching-learning environment as playing a part in the choice of learning approach:

- Subjects that emphasise formal assessment (*summative*) have a tendency to report higher levels of surface approaches, whereas more informal (*formative*) assessment emphasises independent learning and reports higher levels of deep approaches; and
- A tendency to report deep approaches is higher when subjects are perceived as having lecturer support, structure and cohesiveness (i.e. *effective lecturer characteristics*).

Trigwell and Prosser (1991:263) identified several student perceptions of the teaching-learning environment that would result in adopting a deep learning approach. These teaching-learning environments include environments where lecturers:

- Give *adequate* and *helpful* feedback;
- State *clear learning outcomes* and *objectives*;
- State *clear assessment criteria* and *expectations* from students;
- Demonstrate the *relevance* of the subject;
- Make the subject *interesting*;
- Create opportunities for *questions* and *consultation*;
- Is *good at explaining* subject content;
- Make an effort to *understand student difficulties*; and
- Give students the *opportunity to decide* how they want to learn.

The results found in the study by Dart *et al.* (2000:269) pointed to significant correlations between student perceptions of the learning environment and the learning approaches they choose, for example:

- Students will follow a deep approach when lecturers ensure that the teaching-learning environment can be viewed as a milieu that is safe and supportive;
- Students will follow a deep approach when lecturers give them the opportunity to explore, ask questions and experiment by providing problem solving tasks;
- Students will follow a deep approach when lecturers use examples that students can easily identify with; and
- Experiential conceptions positively contribute to deep approaches to learning which, in turn, suppress surface approaches to learning.

The introduction of a mini-audit in the audit course by Chiang *et al.* (2011) as an experiential methodology and active approach to learning confirmed the finding of Dart *et al.* (2000:269) that students tend to follow a deep approach instead of a surface approach when they are actively involved in the learning process. Some perceptions of students on the use of active teaching methodologies in the teaching-learning environment, such as mini-audit simulations or case studies, included (Chiang *et al.*, 2011):

“...the project has been an enjoyable task and a positive, practical way of learning about what auditors really do. The time pressure has been a good simulation of a real life event, while having the added support of strategies and ideas discussed in class. It has been an aid to my learning and a good theorised application of a practical subject”;

“My learning style is largely kinesthetic. I need to do things myself in order to really understand and retain the information. Consequently, it is important to me to apply knowledge learnt in class or through self-study to “practice”. The mini audit is substantially practical. We have to ask what the audit issues are, understand how to deal with the issues and how to then apply the theory to complete the mini audit. Sole reproduction of the facts is not sufficient to complete the mini audit successfully”; and

“I feel that the way the subject is set now gives the student a rounded learning experience that cannot be gained through reading books alone”.

Finally, a study by Abhayawansa and Fonseca (2010:527) on accounting students at the Swinburne University of Technology in Australia also found that the students' perceptions of the teaching-learning environment and some personal characteristics do indeed indicate the learning approach they will choose. Abhayawansa and Fonseca (2010:545) claimed that the following contributed to the tendency of students to follow a surface approach:

- Student culture;
- Prior learning experiences of students;
- Fondness for the content; and
- The predominance of examination-based assessments in the secondary education system which encourages memorisation and reproduction of learning content.

They stated that deep approaches to learning can be promoted by having more classroom discussions and student presentations and using assessment methods that are learner centred, practice oriented and research based (Abhayawansa & Fonseca 2010:545). Furthermore, these researchers explained that, after applying a teaching methodology which included their findings, students who had followed a surface approach tended to engage more freely in deep levels of learning (Abhayawansa & Fonseca 2010:545). This favours the Western pedagogical tradition of empowering learners to take responsibility for their own learning (Abhayawansa & Fonseca 2010:545).

It is evident that more *positive perceptions* of the teaching-learning environment, such as (i) the use of formative assessment and feedback approaches; (ii) the use of active teaching methodologies such as case studies and simulations; and (iii) the presence of effective lecturer characteristics such as being supportive and helpful to students, would stimulate students to adopt a deep approach to learning and go against the norm of surface approaches in accounting and audit education.

No supportive evidence was found for the fact that positive perceptions on the workload requirements of subject content would result in adopting deep learning approaches. However, it emerged that subjects with heavy workload requirements tended to lead students who are studying toward becoming an accounting professional to follow a surface approach to learning. The same could be said for student characteristics, as it was noted that culture and prior learning experiences have also contributed to the adoption of a surface approach. The personal characteristics of students are discussed in more detail later in the chapter (paragraph 4.2.2.1, page 125).

It can be concluded that student perceptions of the teaching-learning environment do indeed have an impact on their approach to learning and, in turn, have an effect on the quality of learning outcomes, which will be discussed next.

4.2.1.3 Learning approaches and learning outcomes

The last factor of the Biggs 3P model to be explored is the product factor, i.e. the effect of deep and surface learning approaches on the quality of the learning outcomes. As noted in paragraph 4.2.1 (page 111), the quality of the learning outcomes can either be quantitative or qualitative in nature (Abhayawansa & Fonseca, 2010:529; Dart *et al.*, 2000:264; Jackling, 2005:275). The difference between these two types of quality is whether the outcomes are focused on how much the student knows (quantitative), or on how well students know what they have learned **and** whether they understand, **and** are able to apply the knowledge that they have learned (qualitative) (Abhayawansa & Fonseca, 2010:529; Dart *et al.*, 2000:264; Jackling, 2005:275).

Various studies have been performed in the field of accounting education and education in general over the last three decades to determine which learning approach will result in which type of quality of the learning outcomes to be achieved by students (e.g. Biggs, 1978:66; Marton, 1975:73; Marton & Saljo, 1976:4; Prosser & Millar, 1989:13; Ramsden, 1979:11; Ramsden, 1985:51). Trigwell and Prosser (1991:261) found that a deep approach was strongly related to qualitative learning outcomes and that a surface approach was more related to quantitative outcomes. Byrne *et al.* (2002:27) and Duff (2004:409) both reported that students who adopt a deep approach perform at an academically higher level, which implies that they have achieved more qualitative learning outcomes.

Research by English *et al.* (2004:461) showed that the surface approach frequently leads to lower-quality learning outcomes, whereas a deep approach often leads to higher-quality outcomes. More recently, Reason *et al.* (2010:5) presented a paper at the Annual Forum of the Association for Institutional Research in Chicago on their study to determine the relationship between a deep approach and the quality of learning outcomes. They reported that students who follow a deep approach obtained higher scores in qualitative learning outcomes such as critical thinking (Reason *et al.*, 2010:5).

From the abundance of literature on the effect of learning approaches on the quality of learning outcomes, the conclusion can be drawn that, if audit students follow a deep approach to learning, higher-quality learning outcomes (qualitative) will be achieved that should result in higher marks. Yet, the question remains as to which type of quality of learning outcomes (quantitative or qualitative) audit students need to achieve to not only

master the audit subject content, but also apply it in examinations or practice after graduation.

The call for accounting students to follow deep approaches to learning still echoes in the 21st century, as noted by Flood and Wilson (2008:228). These researchers stressed the need for high-quality (qualitative) learning outcomes with regard to the knowledge and skills that are expected from accounting students within both higher education and professional education after graduation (Flood & Wilson, 2008:228). Hall *et al.* (2004:491) concur by mentioning that accounting students will develop neither high-quality (qualitative) learning outcomes nor the necessary competencies to apply themselves in practice when a surface approach is followed.

It is, therefore, appropriate to conclude that audit students, and accounting students in general, need to achieve learning outcomes with a qualitative nature. This notion is supported by Flood and Wilson (2008:227), who explained that, if a high level of understanding is needed among prospective professional accountants, which is the case in audit practice, then it is important to encourage a deep approach to learning.

4.2.1.4 Summary on approaches to learning

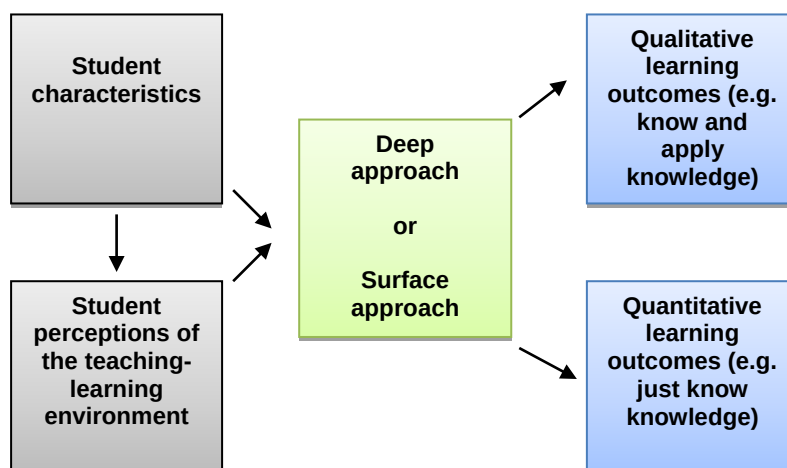
From the findings of the literature review above it is clear that the learning approach that students in general apply will affect the quality of the learning outcomes they achieve. The same could be said for accounting students who have the audit subject as part of their studies at universities or other higher education institutions. It was noted that students sometimes have a preferred orientation toward, or an intention to use, a deep or surface approach in the light of their personal characteristics. However, it is also how students perceive the teaching-learning environment, together with the effect of the students' personal characteristics on this perception, which will, ultimately, lead to or prevent the use of a specific learning approach. In other words, the more positive the students' perception of the variables in the teaching-learning environment, the greater the probability that they will apply a deep learning approach. In contrast, if students perceive the variables in the teaching-learning environment negatively, they will tend to follow a surface approach to learning. Students would be stimulated to adopt a deep approach and go against the norm of surface learning in accounting and audit education when lecturers (i) follow formative assessment and feedback approaches; (ii) apply active teaching methodologies such as case studies and simulations; and (iii) possess the characteristics of an effective lecturer.

Students tend to approach subjects with a high workload, as is the case with the audit subject, by means of surface learning, but no evidence was found in the literature that

positive perceptions on the workload requirements of subject content would result in a deep learning approach. It was noted also that a deep learning approach contributes to achieving high-quality learning outcomes such as critical thinking and higher marks in tests and in examinations. It is imperative that audit students adopt a deep approach to learning in light of the high level of understanding, ability to apply theoretical knowledge and competencies required by professional accountants after graduation.

To summarise, these findings suggest that audit students' *personal characteristics*, their *perceptions of the teaching-learning environment*, and the effect of their *characteristics* on their *perception* have an impact on the *approach* they will apply in studying the audit subject. This, in turn, will have an effect on the *quality of learning outcomes* the students need to achieve if they are to not only pass examinations, but also function effectively in practice after graduation. Figure 4-2 below summarises the interaction of audit students' approaches to learning, their personal characteristics, their perceptions of their teaching-learning environment and the quality of the learning outcomes.

Figure 4-2: Audit students' approaches to learning, their personal characteristics, their perceptions of their teaching-learning environment and the quality of the learning outcomes



(Source: Biggs, 1989:11 – Adapted)

Based on these findings, the conclusion is drawn that, audit lecturers need to promote a deep approach to learning by addressing the variables in the audit teaching-learning environment so that students can have more positive perceptions of these variables. In so doing, students will achieve more high-quality outcomes and contribute to answering the call

for change not only in learning approaches of accounting students in general, but also in the current approach followed in audit education.

The biographical factors and other barriers which affect accounting education students are discussed below.

4.2.2 Biographical factors and other barriers

In bringing change to audit education, biographical factors and other barriers that affect audit students as part of their accounting studies in general, need consideration (Entwistle *et al.*, 2002; Fouché, 2006:42; Guney, 2009:57; Van der Merwe, 2013:90).

Fouché (2006:42) argued that, in addition to learning approaches, students have different circumstances and biographical backgrounds, a fact that accounting lecturers need to be sensitive to when deciding on which teaching approach to follow. Van der Merwe (2013:88) indicated that, in order to improve the performance of accounting students in general at universities or other higher education institutions, insight into the barriers to accounting student achievement is essential. This claim is supported by Entwistle *et al.* (2002), as noted in the introduction to the thesis (paragraph 1.1, page 1). According to Guney (2009:57), studies on phenomena that affect student performance should include both *endogenous* (e.g. age and race) and *exogenous* (e.g. quality of teaching) factors to obtain a clear picture of the barriers to student performance.

Several studies have indeed been performed in this area in an attempt to understand the endogenous and exogenous factors that affect accounting students (e.g. Arias & Walker, 2004:311; Barnes *et al.*, 2009:51; Hartnett *et al.*, 2003:313; 2004:163; Heck *et al.*, 2002:54; Krieg & Uyar, 2001:229; Shaftel & Shaftel, 2005:231; Van Wyk, 2011:145). The studies included students enrolled for an accounting qualification from various universities, countries, ethnicities and backgrounds. Studies on the audit subject specifically are rare but, seeing that the audit subject forms part of the accounting education field and students studying toward an accounting degree generally take the audit subject or an equivalent, it is still important to consider the findings in the general sense of accounting education.

The endogenous and exogenous factors as noted in the literature, although not an all-inclusive list, are discussed next.

4.2.2.1 Endogenous factors

The main findings from the most influential and regularly cited papers in research in this area indicated a variety of endogenous factors that influence student performance. They include *gender, age, mother tongue, race and ethnicity, primary and secondary education and prior knowledge, full-time or part-time enrolment, prior work experience, class attendance and general characteristics of students*. Each of these factors, some relevant research findings, and their effect on the students in the accounting field are discussed next.

Gender

Studies performed on the effect of students' gender on their academic performance reported mixed results. Jackling and Anderson (1998:65) explored the effect of gender differences, among other factors, on performance. The population included first-year students enrolled for an accounting degree at an Australian university (Jackling & Anderson, 1998:68). The study reported that the gender of students did not significantly affect their performance (Jackling & Anderson, 1998:72). Byrne and Flood (2008:208) achieved similar results in their study.

De Hart *et al.* (2011:180) conducted a study to determine the factors that affect performance of entry-level undergraduate taxation students. The results of a t-test revealed no statistically significant difference in the performance of male and female students (De Hart *et al.*, 2011:180). Similarly, several other studies that evaluated accounting student achievement by means of gender analysis found no significant difference in the performance between male and female students (Barnes *et al.*, 2009:51; Hartnett *et al.*, 2004:166; Van Wyk, 2011:157). The findings of Van Wyk (2011:157) on the pass rate differences between genders in the SAICA part one examination, now referred to as the ITC, still seemed relevant in 2014, seeing that no significant difference has been noted (SAICA, 2014c). SAICA (2014c) reported pass rates of 76% and 73% for male and female candidates respectively in the January 2014 ITC examination.

Gammie *et al.* (2003:177) argued that, although numerous studies have been conducted to determine the effect of gender on the performance of accounting students, conflicting results have indicated that the majority of research in this field is, in fact, inconclusive. These researchers investigated gender differences across several subjects, both prior to and post entry into an accounting and finance degree (Gammie *et al.*, 2003:177). One distinct finding was that female students outperformed their male counterparts in the accounting and auditing modules (Gammie *et al.*, 2003:177). In an attempt to ascertain why this outperformance occurred, the researchers set up same-sex focus groups, where three

themes emerged, namely priorities, studying and organisational skills (Gammie *et al.*, 2003:177).

They elaborated on these findings (Gammie *et al.*, 2003:188):

“The genders had very different attitudes to the importance of studying the auditing modules. The male students admitted that their priorities were: placement employment, then social or sporting activities, and finally studying the auditing modules. This was different to the female groups who prioritized studying the auditing modules as being second in importance to their placement employment”.

When it came to studying the audit subject, differences and similarities were noted. Males showed more reluctance to ask for assistance, whereas female students were more open to ask lecturers or other students for assistance when they were struggling (Gammie *et al.*, 2003:188). Another observation was that female students valued high marks in the audit subject more than their male counterparts (Gammie *et al.*, 2003:188). The students reported the same preference for working individually instead of in groups, and both genders found the audit subject to be somewhat boring (Gammie *et al.*, 2003:189). Furthermore, the majority of the male students reported that they usually leave all their tasks to the last minute and do not plan ahead (Gammie *et al.*, 2003:190). The opposite was found for their female counterparts, which indicated that the female students have better organisational skills than the male students (Gammie *et al.*, 2003:190).

From these findings, it appears that gender does not have a significant impact on the academic success of students.

Age

Various studies have applied statistical methods to determine the effect of age on academic achievement which, yet again, rendered inconsistent results.

De Hart *et al.* (2011:183) found that age is a significant indicator of performance. In this study, the respondents were divided into three groups: young (18-22), middle-aged (22-26), and older (27 and older). The results indicated that the young students outperformed both the middle-aged and older students, whereas the older students outperformed the middle-aged students (De Hart *et al.*, 2011:183). In explaining the reasons for this outperformance, De Hart *et al.* (2011:183) reported that younger students seem to be more academically motivated because they might have continued toward tertiary education at a higher education institution directly after completing their secondary education or feel rested, focused and driven to study after taking a gap year or two. It was further noted that

the older group could have been more exposed to the workings of taxation due to the practical application in a person's daily life and that older students seemed more committed to obtaining knowledge (De Hart *et al.*, 2011:183).

Van Wyk (2011:156) reported findings in line with those of De Hart *et al.* (2011:183) that students aged 23.5 years or younger outperformed the students older than 23.5 years. Some explanations included that younger students have just completed school, in contrast with older students who might find it difficult to settle into a study and examination routine or balance family commitments that could negatively affect their performance (Van Wyk, 2011:157).

In contrast, Guney's (2009:65) study noted that older students were achieving higher academic results than their younger counterparts. Guney (2009:65) explained that this might be because students become more disciplined as they grow older. Barnes *et al.* (2009:51), on the other hand, identified no significant difference in student achievement with regard to their age.

Although these studies reported inconsistent results, it seems that younger students could perform better than their older counterparts for the reasons stated earlier from the literature.

Mother tongue

The literature consistently reported that, if students study in their mother tongue, they outclass students who study in a second or third language. De Hart *et al.* (2011:181) found substantial differences between the performance of English-speaking students and speakers of all the other local language groups, except foreign languages. Significant variances were also identified between Afrikaans and all the other language groups excluding foreign languages. The study did not find noteworthy differences between the Nguni and other African language groups, even though both of these groups varied significantly from all the other language groups (De Hart *et al.*, 2011:181). These findings were consistent with those of Barnes *et al.* (2009:50) who contended that, if students study in their first language, they tend to perform better in relation to other students. Crawford and Wang (2014:436) also noted that non-native English-speaking learners reported higher academic performance.

One predominant finding is that English- and Afrikaans-speaking students outperform other native language-speakers in a South African context (Barnes *et al.*, 2009:50; Crawford & Wang, 2014:436; De Hart *et al.*, 2011:181). This confirms the results found by Van Wyk (2011:159) on the success rate in the SAICA part one examination that students with English or Afrikaans as their first language had a success rate in excess of 65%, while students with

a first language other than English or Afrikaans, such as IsiZulu, IsiXhosa, Setswana, Sepedi, Sesotho, Tshivenda, Xitsonga and IsiNdebele, had a pass rate of 53%.

Clearly, to study in one's mother tongue presents an advantage to students with regard to academic success.

Race and ethnicity

Studies performed to determine the effect of race and ethnicity on the achievement of accounting students were mostly conclusive.

Alfan and Othman (2005:340) examined the university records of undergraduate accountancy and business students over a three-year period and noted that the race of these students played a significant role in completing their studies. These students came from several ethnic backgrounds, namely Malay, Chinese and Indian (Alfan & Othman, 2005:329-343). Kaighobadi and Allen (2008:433) also investigated undergraduate business school students and found that the Asian, Hispanic and African-American students were inclined to have a statistically noteworthy lower overall mark average at graduation, in comparison with white students.

Auyeung and Sands (1997:13) conducted a study on the effect of cultural backgrounds. The population consisted of accounting major students from four universities in Australia, Hong Kong and Taiwan (Auyeung & Sands, 1997:17). In this explorative study, the researchers concluded that cultural backgrounds did indeed influence student learning (Auyeung & Sands, 1997:21).

In a South African context, Baard *et al.* (2010:138) did not find any effect of students' race on their academic performance. In contrast to this finding, the study performed by Huysamen (2000:146) revealed that white students perform significantly better than their African counterparts. The results from SAICA's (2014c) January 2014 ITC confirm Huysamen's (2000:146) findings that white students have a higher success rate in the accountancy field. Although white students, as an ethnic group, have been performing the best in the SAICA ITC examination for the past three years, pass rates of non-white students, specifically African students, have increased significantly from 57% in 2012 to 71% in January 2014 (SAICA, 2014c).

Although there is clear evidence that race and ethnicity could have an impact on success in the accounting field, these findings cannot be generalised to the broader population. The reasons for this occurrence are also not noted.

Primary and secondary education and prior knowledge

Research on the education that students receive prior to enrolling at a university or other higher education institution has reported cohesive results. According to Byrne *et al.* (2012:141), the education that students receive prior to university has an influence on their performance and skills to some extent. Crawford and Wang (2014:431) also contended that students who have prior knowledge of accounting when they start a degree in this field at a university or other higher education institution tend to achieve higher grades.

This phenomenon was also explored in the 20th century by Jackling and Anderson (1998:65) in addition to the effect of gender on academic performance, as noted earlier (4.2.2.1, page 125). Jackling and Anderson (1998:72) reported that students' prior knowledge of the subject content does indeed have an impact on their performance. They noted that students who had accounting as part of their studies prior to university outperformed the students who did not have accounting at secondary education level (Jackling & Anderson, 1998:72). A study conducted a number of years earlier by Gul and Fong (1993:33) on first-year accounting students at the University of Hong Kong, reported similar results for prior knowledge of the subject content. Furthermore, these researchers identified that the quality of primary and secondary education have a direct influence on students' performance, specifically in their first year of study (Gul & Fong, 1993:39).

The general quality of education the students receive prior to enrolling at a university or other higher education institutions, as well as previous exposure to the accounting subject in particular, appears to have an effect on students' achievement at a higher level when entering tertiary education.

Full-time or part-time enrolment and prior work experience

Studies on the relation between students' enrolment status, either full-time or part-time, and prior work experience reported similar and opposite results. Katsikas and Panagiotidis (2011:152) explored the effect of full-time or part-time enrolment, among other things, on student performance. These researchers reported that students working full-time and studying part-time tend to achieve lower grades than those students who are enrolled on a full-time basis (Katsikas & Panagiotidis, 2011:160). The reason they put forward is that the part-time students are often unable to attend classes or lectures and usually have external work responsibilities.

Over a decade earlier, Jackling and Anderson (1998:65) also explored the effect of full-time or part-time enrolment on student performance. These researchers' findings partially agree

with the results of Katsikas and Panagiotidis (2011:160) that full-time enrolment does indeed favour students, but only in their first year of study, as they reported that part-time students from their second year are outperforming their full-time counterparts (Jackling & Anderson, 1998:70).

They provided two explanations for this finding (Jackling & Anderson, 1998:70):

- Part-time students work full-time and are exposed to actual practice (i.e. they have seen the theory being applied in practice); and
- Part-time students are usually of mature age and have been observed to display higher levels of motivation and goal orientation.

De Hart *et al.* (2011:180) claimed that part-time, employed students generally outperform their full-time, non-employed peers. They explained that a major contributing factor to these results could be that students who have practical experience of what they are studying, have a better understanding of the theoretical components of the subject content (De Hart *et al.*, 2011:180). Gul and Fong (1993:39) also noted that prior experience of or exposure to the subject content in practice has a positive influence on student learning.

From these findings, there is no distinct answer on whether full-time or part-time enrolment has an effect on student learning. One factor that surfaced throughout these studies, however, is that accounting students benefit from prior experience or exposure to the subject content.

Class attendance

The question on whether class attendance influences students' level of achievement has been investigated by several studies, all coming to the same conclusion. Rankin *et al.* (2003:371) stated that, due to the procedural nature of the curriculum content of accounting, class attendance will be predominantly relevant to accounting courses since learning and success involve substantial build-up of domain-specific knowledge. Similarly, Barnes *et al.* (2009:48) reported that class attendance is significantly correlated with performance in accountancy.

Steenkamp *et al.* (2009:129) identified a lack of class attendance as a factor that prohibits success. In their qualitative study, students were asked why they thought other students failed in this field of study (Steenkamp *et al.*, 2009:129). They noted that nearly a third of the total response group indicated that other students' lack of success was due to non-

attendance (Steenkamp *et al.*, 2009:129). They concluded that students view class attendance as beneficial to their studies (Steenkamp *et al.*, 2009:129).

De Jager (2014:64) concurred with the findings of Steenkamp *et al.* (2009:129). In this qualitative study, student perceptions were gathered on the importance of class attendance (De Jager, 2014:64). The study found that respondents regarded class attendance as a significant factor for academic success (De Jager, 2014:64). Several other studies have highlighted that class attendance by accounting students is of the utmost importance, with results indicating that class attendance does indeed influence student success in accounting-related courses (e.g. Alfani & Othman, 2005:340; Baard *et al.*, 2010:139; Guney, 2009:65; Van Wyk, 2011:163).

Class attendance is therefore a critical factor in achieving success in the accounting degree, and a lack thereof might contribute to failure.

General characteristics

Several background and general characteristics of students have been identified to affect their performance in studying toward an accounting qualification. Gul and Fong (1993:39) raised the issue of students' *self-expectations*. These researchers noted that students with high self-expectations perform better at tertiary level. According to Byrne and Flood (2008:208), students' belief that they have the skills and abilities suited for an accounting qualification will have a significant impact on their academic performance. The study reported that students who have strong *self-belief* and high levels of *self-confidence* are more likely to succeed in their studies than those who doubt their abilities (Byrne & Flood, 2008:208).

Another factor that showed a significant effect on student performance is *students' perceptions* on whether tertiary study will develop their minds, intellectual abilities and performance (Byrne & Flood, 2008:208). In addition, *students' views* that university study will give them the chance to broaden their horizons and face new challenges have an impact on their performance in the variety of subjects tested in this study (Byrne & Flood, 2008:208). These researchers further noted that *prior academic achievement* had a significant influence on students' performance in their overall first year at university (Byrne & Flood, 2008:208).

More recently, Katsikas and Panagiotidis (2011:160) reported that *duration of studies* does have an impact on student performance and that studies which take place over several years could play a part in the academic achievement of students. Byrne *et al.* (2012:134) mentioned that students' *motives for studying* toward an accounting degree also affect their

academic performance, as do their *expectations* as to whether universities or other higher education institutions will enable them to achieve intellectual growth.

From these findings, it seems that several general characteristics of students have an impact on their academic performance. If students have high self-expectations, believe that they have the skills and abilities and, consequently, have self-confidence in their skills and abilities, they would show better academic achievement. Similarly, if students hold positive perceptions on whether tertiary study will develop their minds, intellectual abilities and their performance, they would achieve better marks at tertiary level. Factors such as prior academic achievement, duration of studies and students' motives for studying toward an accounting degree have also been proven to affect their performance.

4.2.2.2 Summary on the endogenous factors affecting audit students

The above findings indicated that there are a variety of biographical matters affecting student performance in accounting education. It was noted that *gender* indeed seems to have an impact on performance in the audit subject specifically, although the impact could be ascribed to other aspects, such as *priorities*, *methods of study* and *organisational skills* associated with a specific gender, instead of being male or female. It was also shown that the quality of students' *primary and secondary education*, and whether they have *prior knowledge* of accounting, will affect the students' learning. Furthermore, younger students seem to be performing better than their older counterparts (*age difference*). Studying in one's *mother tongue* was indicated to be advantageous. *Race and ethnicity* might have an impact on success in the accounting field, as do *class attendance* frequency.

Whether students are enrolled *full-time or part-time* for an accounting qualification at a tertiary institution does indeed affect their performance. Although it is the general impression that full-time students are at an advantage and that they outperform part-time students, a study found that this advantage is counter balanced by the work experience obtained by part-time students while studying from their second year of study onwards. In more broad terms, *cultural background* and *students' perceptions* on whether universities or other higher education institutions can contribute to their learning experience, affect student performance. It was further noted that students' *self-expectations*, *self-confidence*, *prior academic achievement* and *motives for studying* an accounting qualification play a significant part in successful learning. *Duration of studies* was also an indicating factor of student performance.

Although studies revealed contrasting findings with regard to aspects such as gender or enrolment status, it can be concluded that endogenous factors affecting students do indeed

have an impact on their performance in accounting-related subjects. Students enrolled for audit modules would fall under the same category and, therefore, will be exposed to these issues too.

While they cannot always control the biographical factors that audit students are exposed to, audit lecturers need to consider these factors in educating the students. Fouché (2006:42) stated that lecturers in the accounting education arena need to be sensitive to these matters when choosing teaching methodologies. The same could be said for audit lecturers, as these factors, together with other barriers in student learning, affect the audit teaching-learning environment. These factors need to be considered if change is to be brought to audit education.

4.2.2.3 Exogenous factors

Various studies on the effect of exogenous factors on student achievement have been performed since the beginning of the 21st century (e.g. Arias & Walker, 2004:311; Hartnett *et al.*, 2003:313; Heck *et al.*, 2002:54; Krieg & Uyar, 2001:229; Shaftel & Shaftel, 2005:231). These studies identified similar factors to those identified in more recent studies in this field by Guney (2009:51) and Van Der Merwe (2013:86). The findings of the latter two studies are discussed next.

In an attempt to identify the exogenous factors that students have no control over, Guney (2009:57) obtained the view of undergraduates studying toward an accounting degree at a British university. The findings indicated that lecturers' *teaching methodologies*, *lecturer approachability*, *clarity of examination questions*, *usefulness of mid-term tests* and *homework*, *sufficiency of class length* and the *relevance of the module content* to students' future careers appear to be factors that influence student achievement (Guney, 2009:67). Some of the views obtained from students indicated that they would prefer to have longer classes in order to comprehend new and unfamiliar concepts better. The students also reported that the time available for studying and completing examinations was insufficient (Guney, 2009:67). Guney (2009:67) stated that students indicated the quality of lectures, teaching methodologies and assessment methods to be affecting their learning.

A few years later, Van der Merwe (2013:86,95) investigated the barriers to the achievement of 790 accounting students at a SAICA-accredited South African university. The main findings of the study, which correspond with those of Guney (2009:51), noted several exogenous factors hindering student performance (Van der Merwe, 2013:95):

- The students reported *insufficient communication* from the lecturers regarding the expectations for each new study year and what they will be doing in practice after graduation.
- Lecturers *failed to motivate* students. Students felt that they were not being motivated and stimulated to study and work hard due to insufficient attempts to inspire students in their academic pursuits.
- Students said that the *supplemental instructions* they were receiving were *not effective or frequent enough*.
- They also indicated the need for *higher-quality supplemental instruction opportunities*.
- *Homework assignments* were deemed *insufficient*.
- Students also noted that *homework, class tests and examinations* were not of the *same standard* and they were not able to adequately prepare for class tests or examinations.
- Although students indicated that their textbooks were sufficient for their needs, the assistance of *study guides* received *lower appreciation*.
- There was a general feeling that *the teaching methods were inadequate*, because the students indicated that the current teaching methodologies were not predominantly varied, exciting or effective.

4.2.2.4 Summary of the exogenous factors affecting audit students

The literature review identified factors outside the control of the students themselves that influence their learning. In turn, these factors are controlled by the lecturer and, to a limited extent, include factors such as the *teaching methodologies, lecturer approachability, clarity of examination questions, usefulness of mid-term tests and homework, sufficiency of class length* and the *relevance of the module content*. *Insufficient communication* with students and *failure to motivate* students to perform better were also identified as contributing factors posing a threat to academic achievement. The majority of these factors were also noted in chapter 3 (page 55) as factors that the audit lecturer needs to consider.

Van der Merwe (2013:102) concluded on his findings by stating that:

“The study provides food for thought which should stimulate readers to spot possible weaknesses in their own programmes and spark further research in order to break down achievement barriers one at a time and to increase the contribution of accounting education to the public good and to the eradication of skills shortages on this continent and abroad”.

As this statement was aimed to the broader spectrum of lecturers in the accounting education field, it is clear that audit lecturers, which were discussed in detail in chapter 3 (page 55), needs to consider these factors in their attempt to bring change to audit education.

4.3 Chapter summary

Chapter 4 opened with an introduction to the audit student as a variable in the audit teaching-learning environment. This included an argument as to the importance of considering the audit student if change is to be brought to audit education.

A discussion followed on the audit student as a variable effecting change to the current approach followed in audit education. The audit student was defined, as well as the specific variables affecting the audit student, namely *learning approaches* and *biographical (endogenous)* and *other factors (exogenous)* that influence the learning experience at university or other higher education institutions.

The learning approaches that students follow in general were identified, discussed and their implication on audit education explained. A discussion followed of the factors that affect students to adopt either a deep or surface learning approach, together with the impact of the specific approach on the quality of learning outcomes. These factors included the *personal characteristics* of students such as learning preferences and the *variables in the teaching-learning environment* such as teaching methodologies, content, and assessment and feedback approaches. It was also noted from the literature that the current tendency in student learning approaches, specifically in the accounting field, is a surface approach.

The literature indicated that students sometimes have a *preferred orientation toward*, or an *intention to use*, a *deep or surface approach* to learning in the light of their *personal characteristics*. However, *students' perceptions of the teaching-learning environment* may ultimately determine or prevent the choice of learning approach. It was highlighted that *positive perceptions* of the variables in the teaching-learning environment will result in the

likelihood that students will apply a *deep approach* to learning. It was stated how the lecturer could create these positive perceptions, namely (i) by using formative assessment and feedback approaches; (ii) by applying active teaching methodologies such as case studies and simulations; and (iii) by displaying the characteristics of an effective lecturer such as being supportive and helpful to students. The importance of a deep approach in learning audit was argued next. This was followed by a summary on learning approaches as a factor affecting the audit student. The second factor considered in defining the audit student was discussed next, and it was noted that there are a variety of biographical and other barriers that hinder student learning.

The literature with regard to the biographical variables produced several significant findings. It appears that *gender* does not significantly affect the academic success of students and that younger students could perform better than their older counterparts (*age*). It was also found that studying in one's *mother tongue* clearly presents an advantage to student success, and that *race and ethnicity* might have an impact on success in the accounting field, because it seems that white students are still performing better. However, significant improvement in non-white students' performance has been observed in recent years.

Furthermore, the general *quality of education* that students receive prior to enrolling at a university or other higher education institutions, together with *previous exposure* to the accounting subject in particular, appears to have a positive effect on students' achievement at a higher level. *Full-time or part-time* enrolment also appear to be influencing student learning, as did students' *prior experience* or *exposure* to the subject content. The frequency of *class attendance* proved to be an important factor in achieving success in the accounting degree, as low levels of class attendance indicated lower academic achievement, specifically in the accounting education field.

Several general characteristics were highlighted as having an impact on the academic performance of students. Higher levels of *self-expectations* and *self-belief* in the skills and abilities to obtain an accounting qualification might result in better academic achievement by students. The same can be said for *student perceptions* on whether tertiary study will develop their minds, intellectual abilities and their performance, as a more positive perception, together with factors such as *prior academic achievement*, *duration of studies* and *students' motives* for studying toward an accounting degree also showed influence on their performance.

Other barriers affecting student learning, as noted from the literature, are factors outside the control of the students themselves. These factors seem to be controlled by the lecturer and,

to a limited extent, include factors such as the *teaching methodologies*, *lecturer approachability*, *clarity of examination questions*, *usefulness of mid-term tests and homework*, *sufficiency of class length* and the *relevance of the module content*. *Insufficient communication* with students and a *failure to motivate* students to perform better were also identified as contributing factors that threatened academic achievement in the accounting pedagogy.

Subsequently, the importance was stated of considering these factors if change is to be brought to audit education. This was followed by a summary on these factors, as well as a summary on this chapter.

In conclusion, probably the most well-known scientist of all times, Albert Einstein, claimed: “The only thing that interferes with my learning is my education” (Einstein, 2014). Based on the findings of this chapter, it is evident that a variety of variables and factors exist which interfere with, and sometimes suppress, students’ education experience and the results they achieve. If change is to be brought to the approach followed in audit education, lecturers need to consider these factors to ensure that any interference contributes positively to the learning experience. This will ensure the achievement of the high-quality learning outcomes that are required from audit students after graduation.

The subject content that students need to master and the high-quality learning outcomes they have to achieve are discussed in the next chapter.

Chapter 5

The audit teaching-learning environment:

The subject content

"It is the mark of an educated mind to be able to entertain a thought without accepting it." – Aristotle

5.1 Introduction

The last variable in the audit teaching-learning environment to be discussed is the subject content. In the previous chapters the audit lecturer, the audit classroom (chapter 3, page 55) and the audit student (chapter 4, page 110) were defined, and their impact on audit education was discussed. Chapter 5 addresses the fourth secondary research objective as stated in chapter 1 (paragraph 1.5, page 15) by investigating the required content of the audit curriculum to identify the technical knowledge and skills that are necessary for students to be perceived competent in the field of auditing. Furthermore, the content of the audit teaching-learning environment is also an important factor for consideration if an instrument (i.e. audit simulation) is to be developed to bring change to the audit classroom.

Currently, there is global debate on what the audit student should know and be able to do upon entrance into audit practice. According to Ulrich *et al.* (2011:935), accounting literature reports that audit practitioners are not satisfied with the education which audit students are receiving at universities or other higher education institutions. They further stated that (Ulrich *et al.*, 2011:935) "[p]ractitioners expect new accounting graduates to have a reasonable degree of practical skill in auditing while educators believe that it is the practitioners' responsibility to train their entry-level auditors how to audit".

Several researchers in the field of audit education such as Saunders and Machell (2000:290), Tan *et al.* (2004:51-53) and De Lange *et al.* (2006:365-370) stressed the call for change in the approach with which auditing is taught at universities or other higher education institutions. This call for change is a result of the accounting profession's emphasis that students should not only understand the technical knowledge about the audit subject, but also be able to apply this knowledge and possess many generic and pervasive skills that will enhance their ability to be hired and to apply themselves in public practice (Saunders & Machell, 2000:290-298; Tan *et al.*, 2004:51-53).

From a South African prospective, SAICA, in 2010, attempted to answer this call for change in accounting education in general. As noted in chapter 1 (paragraph 1.1.3, page 7), SAICA has established a competency framework which sets out the required competencies of CA(SA)s upon entering the auditing profession (SAICA, 2010:6). Barac (2012:51) explained that this competency framework was established so as to indicate or clarify the expected competencies for entry-level CAs. This is a departure from past practice where SAICA had prescribed syllabi to be followed by accredited universities or other higher education institutions.

The introduction of a competency framework as part of the curricula followed at SAICA-accredited higher education institutions will ensure that individuals who enter the profession have the knowledge and practical skills to perform the required tasks of a CA in today's business environment (SAICA, 2010:3). SAICA has further attempted to address this call for change and deliver competent students to the marketplace by changing the examination format for qualifying as a CA(SA). These changes resulted in the following (SAICA, 2014d):

- A revised Part I examination, now known as the ITC, was implemented in 2013; and
- As of 2014, a completely new Part II examination has been implemented, known as the Assessment of Professional Competence (APC), which replaced the previous Part II examination. The latter focused on auditing or financial management, depending on the type (training inside public practice [TIPP] or training outside public practice [TOPP] respectively) of CA qualification that the student aimed to achieve. It should be noted that the TIPP and TOPP terminology no longer exist and SAICA does no longer distinguish between different training contracts. The APC will be written by all trainee accountants, irrespective of whether their practical training takes place in auditing or financial management practice.

SAICA stated that the APC will not be focusing on the technical aspects of the specific technical competencies – these are tested broadly in the ITC – but on the strategic and managerial aspects of the broader accountancy discipline. Its primary objective will be to assess the professional competence developed during the combination of academic, professional and training programmes (SAICA, 2014d). The APC is in the format of a simulated case study, which aims to assess the students' ability to apply the knowledge and skills they have gained to real life (SAICA, 2014d). This will ensure integration of all disciplines, problem solving, distinguishing between relevant and irrelevant information, synthesis of information and much greater emphasis on the assessment of the generic and pervasive skills such as ethical behaviour, professionalism, personal attributes and

professional skills, as noted in chapter 1 (paragraph 1.1.3, page 7) (SAICA, 2010:18; 2014d). Based on this new Part II examination format, students will be assessed as being competent or not, in contrast to the past where students were assessed as being competent based on passing a written, more theoretically oriented examination (SAICA, 2014d).

It is evident that the call for change in accounting education in general is in the process of being answered by SAICA in its implementing of several changes that accredited tertiary institutions need to make to their curricula. The generic and pervasive skills are also given more prominence, because they will have a significant impact on whether students will be assessed as being competent and be offered entry into the prestigious realm of the accounting profession. This competency framework, if implemented correctly at tertiary level, will therefore aid in filling the gap between what practitioners want audit educators to teach, and what audit educators think they should be teaching.

Audit lecturers have to incorporate not only the technical competencies of the audit subject, but also a number of generic and pervasive skills so as to develop audit students to be highly competent when entering professional practice. In doing so, an attempt can be made by audit lecturers to answer the call from practice to deliver students to the marketplace who know the technical substance of the audit subject content and are able to apply these principles in professional practice, in addition to demonstrating a variety of generic and pervasive skills. This will aid in fostering change to the teaching approach followed in audit education today.

The remainder of this chapter focuses on defining the concept of competence in the CA profession and identifying the audit competencies. An explanation will be provided as to how these competencies and the generic and pervasive skills in the SAICA competency framework are being translated into the subject content or curriculum. The competency framework is used to set the learning outcomes for the audit simulation developed to meet the sixth secondary research objective of this study.

5.2 Defining competence and the SAICA competency framework

The SAICA competency framework requires a CA to have mastered a broad range of competencies when entering the profession. Shao and Muller (2011:948) described competencies as characteristics that include knowledge, skills and personal attributes.

Rehman *et al.* (1998:100) viewed competencies as generic knowledge, skills or attitudes that people demonstrate through their performance.

They claimed that (Rehman *et al.*, 1998:100):

“Knowledge is having information about, knowing, understanding, being acquainted with, being aware of, having experience of, or being familiar with something, someone, or how to do something. Skill is the ability to use one's knowledge effectively, and attitude is a mental or emotional approach to something or somebody”.

The term “competency” has been defined by Succar *et al.* (2013:175) as the ability of an individual to perform a specific task or to deliver a measurable outcome. Being competent or having mastered a competency, therefore, requires an individual to have knowledge about a specific task to be performed, have the ability to apply this knowledge in performing that task and have the attitude or cognitive ability required to perform the task. The outcome of the task performed (competence) should also be measurable to some extent.

This meaning of what competence or competency constitutes is also evident in the SAICA competency framework. These competencies do not only include knowledge requirements, but also the skill and attribute requirements to successfully perform a task and be measured or observed as being competent in the CA profession. These competencies include areas of specialism such as i) *strategy, risk management and governance*; ii) *financial management*; iii) *auditing and assurance*; iv) *accounting and external reporting*; v) *taxation*; vi) *management decision making and control*; and vii) *generic and pervasive skills* such as *ethics and professionalism, personal attributes and professional skills*.

As the focus of this study is on improving the audit competence of audit students specifically (see paragraph 1.6, page 18), as well as incorporating the generic and pervasive skills into the development of an audit simulation to bring change to audit education, the remainder of this chapter will explore the competencies with regard to *auditing and assurance*, the *generic and pervasive skills* included in the competency framework and how they all translate to the audit curriculum *subject content*.

As mentioned in chapter 1 (paragraph 1.1.3, page 7), the SAICA competency framework was developed based on extensive research in international trends and local consultation with practitioners, and included a substantial amount of input from academe (Olivier, 2014). Furthermore, it was noted that the World Economic Forum's Global Competitiveness Report for the years 2013-2014 ranked the strength of South Africa's auditing and reporting

standards, which are applied internationally, as being number one in the world (WEF, 2013) (paragraph 1.6, page 18). Owing to the fact that the subject content of the various subjects in the accounting field is based on these auditing and reporting standards, and the fact that the competencies in the SAICA competency framework are informed by these content requirements, the author is of the opinion that the SAICA competency framework requirements are a sufficient measure of the broad competence of audit students. It should be noted that, for the current study, the competencies and subject content requirements have been obtained from the SAICA competency framework (SAICA, 2010) and are used as they appear in the framework.

5.3 Auditing and assurance

In today's business environment, auditors are engaged to provide a variety of services to clients and the broader public. Some of these services include (IFAC, 2013; Puttick *et al.*, 2007:60; SAICA, 2010:68-69):

- Statutory audits of entity financial statements;
- Review of entity financial statements;
- Audits of donor funds received and spent by non-governmental organisations;
- Other agreed-upon procedures such as performance of complex calculations;
- Financial statement compilations;
- Environmental assurance reports for mining or chemical industries; and
- Forensic investigations.

Auditors, therefore, perform a variety of services, both assurance and non-assurance in nature. An *assurance service* is defined as “an engagement in which a practitioner expresses a conclusion designed to enhance the degree of confidence of the intended users other than the responsible party about the outcome of the evaluation or measurement of a subject matter against criteria” (IFAC, 2013; SAICA, 2010:67). Puttick *et al.* (2007:60) described this type of engagement as one in which an opinion or conclusion is given by means of measuring the relevant information against objective criteria. An assurance engagement is, therefore, a service that is provided in which an opinion is expressed or a conclusion is reached about a set of information after measuring the information against certain objective benchmarks. The objective is to provide the stakeholders with some level of

assurance about the reliability and accuracy of the information. On the other hand, when *non-assurance services* are rendered, no assurance is expressed in the form of an opinion. These services include agreed-upon procedures and the compiling of financial statements of entities (IFAC, 2013; Puttick *et al.*, 2007:61).

The SAICA competency framework noted that entities and the broader public look to the external audit of financial statements, statutory or otherwise, to authenticate the information and to confirm the reliability of the information disclosed in the financial statements of an entity (SAICA, 2010:67). The objective of an audit is stated in ISA 200 paragraph 11 as (IAASB, 2012:3):

- “ (a) To obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, thereby enabling the auditor to express an opinion on whether the financial statements are prepared in all material aspects, in accordance with an applicable financial reporting framework; and
- (b) To report on the financial statements, and communicate as required by the ISAs in accordance with the auditor’s findings”.

Based in these findings, an audit of financial statements is, in fact, an assurance engagement, seeing that a level of assurance is given to stakeholders by means of expressing an opinion on the financial statements.

SAICA (2010:67) argued that, even though the audit of financial statements in South Africa may only be performed by Registered Auditors (RAs), the majority of these individuals would also have obtained the CA(SA) qualification. Furthermore, despite the fact that a CA might have no intention of becoming a RA, the specific competencies in auditing and assurance are vital for all CAs (SAICA, 2010:67). This argument is based on the fact that the competency framework was developed based on extensive research in international trends and local consultation with practitioners, and included a substantial amount of input from academe (Olivier, 2014), as noted in chapter 1 (paragraph 1.1.3, page 7). Hence, these auditing and assurance competencies have been included in the curriculum at all the SAICA-accredited universities or other higher education institutions.

Table 5-1 that follows illustrates the various auditing and assurance competencies, together with the skills, which the students should be able to demonstrate to be deemed competent, as illustrated in the SAICA competency framework. This is followed by the knowledge (content) requirements needed to demonstrate the required competence.

Table 5-1: Auditing and assurance competencies

Competency number	Competency description	Required skills to be deemed competent in the competency
1	Analyse, evaluate and advise on assurance needs.	• Understand the various types of assurance services that are available; • Recommend assurance services appropriate to meeting the entity's needs; and • Identify the nature, scope, standards and legislation applicable to a particular engagement.
2	Provide assurance services.	Consist of a variety of competencies as discussed in competency number 2.1 to 2.11.
2.1	Identify and consider issues related to accepting an engagement.	• Gather and examine information pertaining to a potential client to assess whether or not there are significant threats to ethical requirements resulting from undertaking the engagement; and • Utilise the understanding gained of the elements of risk and the decision factors when evaluating the overall risk in accepting the engagement.
2.2	Establish the terms of the engagement.	• Draft an appropriate engagement letter for a new engagement. • Recognise circumstances when a new engagement letter needs to be issued for existing engagements; and • Follow the procedures required by legislation or professional pronouncements to accept appointment.

(Source: SAICA, 2010:71-76)

Table 5-1: Auditing and assurance competencies (continued)

Competency number	Competency description	Required skills to be deemed competent in the competency
2.3	Identify and assess the key risks for the performance of the engagement.	• Obtain an understanding of the entity and its environment, including internal controls; • Based on the understanding, identify the specific risks that could result in material misstatement of the subject matter, including fraud risk factors; and • Assess the risk of material misstatement at the overall financial statement level and at the assertion levels.
2.4	Determine which rules, standards or policies to apply to the subject matter being evaluated.	Assess the suitability of criteria: • For general-purpose financial statements, such criteria would include the International Financial Reporting Standards (IFRS); and • For other engagements, identify what set of rules or policies best apply to the material (e.g. financial statements) being evaluated.
2.5	Develop materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement.	• Develop an understanding of the decision-making needs of the users of the information; • Identify the factors that affect materiality; and • Determine a planning materiality level.

(Source: SAICA, 2010:71-76)

Table 5-1: Auditing and assurance competencies (continued)

Competency number	Competency description	Required skills to be deemed competent in the competency
2.6	Design effective and efficient procedures based on the engagement's scope and the assessed risks.	• For a given set of circumstances, decide on – - The form, extent and quality of evidence required to support the assurance report; - The most efficient testing procedures (e.g. tests of control and or substantive tests of detail or analytical procedures) to obtain the evidence; and - The need to make use of others (experts, internal auditors and other auditors) or the need to use computer-assisted audit techniques to gather evidence. • Communicate the plan to appropriate key stakeholders (including those charged with governance); • Based on the above considerations, design appropriate programs of engagement procedures; and • Be alert to changes in circumstances not considered in the design of the engagement procedures and adjust the procedures appropriately.

(Source: SAICA, 2010:71-76)

Table 5-1: Auditing and assurance competencies (continued)

Competency number	Competency description	Required skills to be deemed competent in the competency
2.7	Execute the work plan.	• Perform the procedures specified in the program (e.g. analytical review of expenses); • Apply an appropriate level of professional skepticism, remaining alert to the possibility of fraud; and • Modify the work plan as necessary.
2.8	Document the results of procedures performed.	• For each procedure performed, ensure that the documentation provides a clear link to significant findings or issues that arose during the engagement; • Ensure the documentation contains sufficient information to support the nature, timing and extent of the further audit procedures performed and the results of the procedures; • Draw a conclusion on whether the procedure meets its objective; and • Evaluate the overall adequacy of documentation.

(Source: SAICA, 2010:71-76)

Table 5-1: Auditing and assurance competencies (continued)

Competency number	Competency description	Required skills to be deemed competent in the competency
2.9	Evaluate the evidence and draw conclusions.	• Evaluate the sufficiency and significance of the evidence and or results of analysis; • Identify and evaluate inconsistencies, unexpected circumstances or findings, or findings that indicate possible fraud, error or illegal acts and assess the impact on the report; • Analyse and decide on the reasonableness of the conclusions on the subject matter, based on an understanding of the nature of the business and its operations for the period and on the outcome of assurance procedures; • Determine whether the subject matter conforms to the rules, standards, or policies used for evaluation; • Evaluate the reasonableness or fair presentation of the subject matter as a whole; • Analyse the impact of unresolved disagreements or scope limitations in the context of materiality, and decide on the need to gather additional evidence or to extend the scope of procedures; and • Assess the need to make corrections to the subject matter (e.g. financial statements) or other remediation.

(Source: SAICA, 2010:71-76)

Table 5-1: Auditing and assurance competencies (continued)

Competency number	Competency description	Required skills to be deemed competent in the competency
2.10	Draft the report upon completion of the engagement.	• Develop an appropriate report in accordance with the terms of the engagement, and the applicable statutory, regulatory or professional requirements; • Identify and consider the impact of subsequent events on the report; and • Consider the impact of other information in documents containing assurance reports on the report.
2.11	Prepare information for meetings with stakeholders.	• Prepare information for timely discussion with management, those charged with governance, and other stakeholders in presentation or report format, on matters which may include: - The results of assurance procedures; - Recommendations for improvement to processes, controls, etc.; - Misstatements arising from fraud; - Misstatements arising from error; - Illegal or possibly illegal acts; and - Any other item required due to the nature of the engagement (e.g. applicable statutory requirements).

(Source: SAICA, 2010:71-76)

Table 5-1: Auditing and assurance competencies (continued)

Competency number	Competency description	Required skills to be deemed competent in the competency
3	Provide control-related services.	Consist of a variety of competencies as discussed in competency number 3.1 to 3.4.
3.1	Identify and evaluate the risks pertaining to the financial information system.	- Identify and understand the major classes of transactions and balances; - Identify and understand the nature of the financial information system (e.g. stand-alone or networked environment; off-the-shelf or customised software); and - Based on this understanding, identify and evaluate the information risks.
3.2	Identify and document the key internal controls (including IT-related controls) implemented in an entity.	- Identify and document the internal control system (including IT-related controls), addressing the following areas: - The control environment; - The entity's risk assessment process; - The information system, including the related business processes, relevant financial reporting and communications; and - Control activities both manual and automated, including: Systems development and change controls, control activities (both manual and automated), including access controls, continuity of operations, disaster recovery and application controls.

(Source: SAICA, 2010:71-76)

Table 5-1: Auditing and assurance competencies (continued)

Competency number	Competency description	Required skills to be deemed competent in the competency
3.3	Evaluate internal control.	• Select suitable criteria or a recognised framework for control evaluation; • Evaluate internal control in the context of the criteria or recognised framework; • Identify the adequacy of compensating controls; and • Understand the implications of deficiencies identified and recommend improvements.
3.4	Evaluate IT-related elements of internal control.	• In the context of one of the recognised frameworks, identify methods of evaluating the reliability of specific IT-related control elements for – - Compliance with policy; - Effectiveness; and - Achievement of performance objectives. • Identify and evaluate, on a preliminary basis, the feasibility of various approaches used in the evaluation of IT-related elements of internal controls (e.g. around the computer, through the computer, with the computer); and • Test the functioning of the IT controls (e.g. using audit software).

(Source: SAICA, 2010:71-76)

Table 5-1: Auditing and assurance competencies (continued)

Competency number	Competency description	Required skills to be deemed competent in the competency
4	Design, implement and manage the quality control system in the firm.	• Understand the importance of quality control in the performance of engagements; • Design, implement and manage an effective quality control system in the professional accounting firm that addresses the following areas: - Leadership responsibilities for quality within the firm; - Ethical requirements; - Acceptance and continuance of client relationships and specific engagements; - Human resources; - Engagement performance; and - Monitoring. • Respond to the findings of the practice review undertaken by the Independent Regulatory Board for Auditors (IRBA) and the findings of internal reviews; and • Ensure that the quality control system is effective in managing the legal liability of the firm to clients and third parties.
5	Identify and respond to reportable irregularities.	• Investigate a potential unlawful act or omission to determine whether there is reason to believe that it constitutes a reportable irregularity; • Follow the prescribed process if a reportable irregularity is identified; and • Modify the audit report to deal with any reportable irregularity reported to the IRBA.

(Source: SAICA, 2010:71-76)

It was noted in the definition of competency mentioned earlier (paragraph 5.2, page 140) that knowledge of a specific task is required to demonstrate competence. SAICA (2010:76) stated that the knowledge and understanding of the audit subject content forms the foundation for a competency to be acquired by an audit student. In simpler terms, this indicates that audit students do not only need to possess the knowledge for a particular task, but also have an understanding of the knowledge to demonstrate the required skills of applying the audit content knowledge in an actual audit event. In order to obtain this thorough understanding and, consequently, be evaluated as being competent in all the competencies (see table 5-1), the audit student is required to master the subject content which consists of several ISAs, legal and regulatory frameworks, pronouncements and other audit standards. The various audit standards include (IFAC, 2013):

- International Standards on Auditing (ISAs);
- International Standards on Quality Control (ISQCs);
- South African Auditing Practice Statements (SAAPSs)
- International Auditing Practice Statements (IAPSs);
- International Standards on Review Engagements (ISREs);
- International Standards on Assurance Engagements (ISAEs); and
- International Standards in Related Services (ISRSs).

Table 5-2 that follows shows the subject content that SAICA-accredited universities or other higher education institutions are expected to incorporate into their syllabi to ensure that students are able to meet the competency requirements and demonstrate the required skills. Although all the subject content requirements are assessed in the SAICA board examinations on different knowledge level indicators, which change marginally every year (SAICA, 2010:76-78), table 5-2 summarises the content requirements with no reference to the knowledge level requirements.

Table 5-2: Audit subject content

The legal and regulatory environment governing auditors and their responsibilities, functions and qualities
Framework for assurance engagements.
Auditing Profession Act 26 of 2005.
Companies Act 71 of 2008.
Structure of pronouncements issued by the International Auditing and Assurance Standards Board (IAASB).
The authority of auditing and assurance standards and practice statements issued nationally and internationally.
KING III Report.
SAICA CPC and By-Laws.
IRBA CPC and Disciplinary Rules.
Quality controls for firms that perform audits and reviews of financial statements, and other assurance and related service engagements. (ISQC 1 / SAAPS 1)
Overall objectives of the independent auditor and the conduct of an audit in accordance with ISA. (ISA 200)
Acceptance and continuance of audit engagements (ISA 210): • Appointment, resignation and removal; • Statutory, professional and contractual rights and responsibilities; • Capping of auditor liability – non-statutory engagements; and • Agreeing the terms of engagement.
Quality control for an audit of financial statements. (ISA 220)
Audit documentation. (ISA 230)
Responsibilities relating to fraud in an audit of financial statements. (ISA 240)
Responsibilities in terms of money laundering legislation.
Consideration of laws and regulations in an audit of financial statements. (ISA 250)
Communication with those charged with governance. (ISA 260)
Communicating deficiencies in internal control to those charged with governance and management. (ISA 265)

(Source: SAICA, 2010:77-80)

Table 5-2: Audit subject content (continued)

The audit process
The audit process.
Financial statement assertions.
Planning an audit of financial statements. (ISA 300)
Identifying and assessing the risks of material misstatement through understanding the entity and its environment. (ISA 315)
Materiality in planning and performing an audit. (ISA 320)
The auditor's procedures in response to assessed risks of material misstatement. (ISA 330)
Planning in a computerised information systems environment.
Fundamental principles of audit evidence. (ISA 500)
Audit testing procedures to gather audit evidence.
Nature, timing and extent of: • Tests of controls; • Substantive analytical procedures; and • Substantive tests of detail.
Computer-Assisted Audit Techniques. (CAATs)
Enquiries regarding litigation and claims. (SAAPS 4)
Specific considerations for selected items. (ISA 501)
External confirmations. (ISA 505)
Initial audit engagements – opening balances. (ISA 510)
Analytical procedures. (ISA 520)
Audit sampling. (ISA 530)
Audit of accounting estimates, including fair value accounting estimates, and related disclosures. (ISA 540)
Related parties. (ISA 550)
Subsequent events. (ISA 560)
Going concern. (ISA 570)
Written representations. (ISA 580)
The special considerations in the audit of small entities. (IAPS 1005)
Auditing derivative financial instruments. (IAPS 1012)
Audits of group financial statements (including the work of component auditors). (ISA 600)
Using the work of internal auditors. (ISA 610)
Using the work of an auditor's expert. (ISA 620)
Consideration of the sufficiency and appropriateness of audit evidence.
Evaluation of misstatements identified during the audit. (ISA 450)

(Source: SAICA, 2010:77-80)

Table 5-2: Audit subject content (continued)

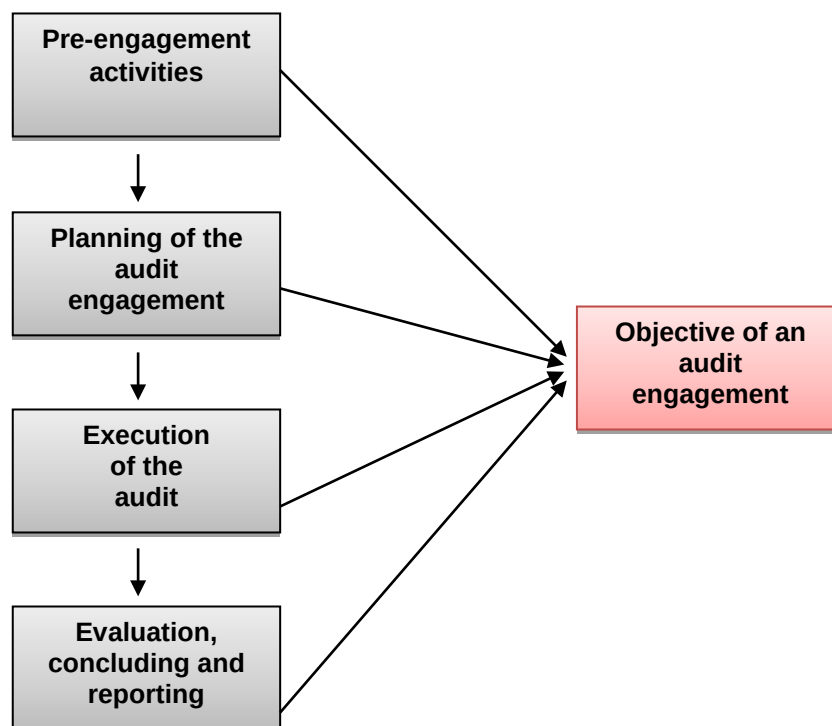
The audit process (continued)
Consideration of the fair presentation of the financial statements.
Consideration of circumstances of possible trading while factually insolvent. (SAICA guide)
Forming an opinion and reporting on financial statements. (ISA 700)
Modifications to the opinion in the independent auditor's report. (ISA 705)
Emphasis of matter paragraphs and other matter paragraphs in the independent auditor's report. (ISA 706)
Comparative information. (ISA 710)
The auditor's responsibility relating to other information in documents containing audited financial statements. (ISA 720)
Reporting by auditors on compliance with IFRS. (IAPS 1014)
Issues relating to audit reports and financial information presented in an electronic format.
Audits of financial statements prepared in accordance with special purpose frameworks. (ISA 800)
Audits of single financial statements and specific elements, accounts or items of a financial statement. (ISA 805)
Engagements to report on summary financial statements. (ISA 810)
The consideration of environmental matters in the audit of financial statements. (IAPS 1010)
Client's use of service organisations. (ISA 402)
Electronic commerce – effect on the audit of financial statements. (IAPS 1013)
Non-audit engagements
Engagements to review financial statements. (ISRE 2400)
Assurance engagements other than audits or reviews of historical financial statements. (ISAE 3400)
Engagements to perform agreed-upon procedures regarding financial information. (ISRS 4400)
Engagements to compile financial information. (ISRS 4410)

(Source: SAICA, 2010:77-80)

These content requirements are applied in practice based on a set framework, i.e. the audit process. The various steps in the audit process need to be performed in a specific order to ultimately determine an audit strategy. This strategy should direct the auditor in the right direction to obtain audit evidence that would serve as the proof on which the assurance engagement opinion is to be based (Puttick *et al.*, 2007:178).

The audit process, broadly speaking, comprises four stages (IAASB, 2012; Jackson & Stent, 2012; Marx *et al.*, 2011; Puttick *et al.*, 2007:178). These include the pre-engagement activities, the planning of the audit engagement, the execution of the audit, and the evaluation, concluding and reporting stage as indicated in figure 5-1.

Figure 5-1: The audit process



(Source: Author)

Each stage consists of numerous activities to be performed by the auditor in accordance with audit standards, legislation and other statements in order to ensure that the objective of an audit of financial statements, as stated earlier, is realised. The various content aspects of the audit subject all fit into the steps of the audit process. For this reason, a thorough understanding of the audit principles (encapsulated in the various ISAs, legal and regulatory frameworks, pronouncements and other audit standards) is required to perform an assurance or non-assurance engagement and, consequently, demonstrate competence in the auditing and assurance field.

5.3.1 Summary on auditing and assurance

Auditing and assurance as part of the SAICA competency framework includes several abilities that students need to master, specifically in the audit subject. Auditors perform a

variety of services in practice; thus, numerous audit standards, legislation and other statements are included in the audit subject content. It was noted that competencies are obtained by not only acquiring the knowledge of the various audit standards, legislation and other statements, but also by developing an understanding of these requirements and having the ability to apply the theory in practice by following the audit process.

For this reason, audit lecturers at universities or other higher education institutions need to develop the audit curriculum to both incorporate these content requirements and assist students in developing the abilities to be deemed competent in the field of auditing and assurance. Effective implementation of this competency framework, which does not only focus on the technical content, but also on the development of competencies in auditing and assurance, will assist in transforming the approach to audit education and deliver audit graduates who are deemed competent upon entering practice. The latter can be achieved by incorporating the generic and pervasive skills or personal attributes required to successfully function in the audit arena, as the development of these skills are essential for every young aspiring auditor.

5.4 Generic and pervasive skills

The introduction to this chapter (paragraph 5.1, page 138) pointed to the importance of incorporating the generic and pervasive skill competencies into audit curriculum. These skills and qualities, combined with the specific specialisms that the CA profession is acknowledged for, produce technical excellence, objectivity and commitment to the protection of public interest (SAICA, 2010:20). Therefore, students studying toward the CA qualification should be able to demonstrate these skills after completion of their tertiary education (SAICA, 2010:20).

In chapter 1 (paragraph 1.1.3, page 7) it was noted that generic and pervasive skills form a set of skills that comprises many cognitive, affective and behavioural elements (Ballantine & McCourt Larres, 2004:179-180; Nikolai, 1996:193). It was indicated that cognitive skills include skills that form part of the thought process, such as conceptual, problem solving and critical thinking (Ballantine & McCourt Larres, 2004:179-180; Nikolai, 1996:193). Furthermore, research has shown that emotions or characteristics can be associated with affective skills, whereas behavioural skills take into account the actions performed by the trainee auditor such as time management and the ability to work in a team and communicate in both oral and written format (De Lange *et al.*, 2006:365-370; Nikolai, 1996:193-195). SAICA (2010:18) described these qualities and skills as those that a CA

brings to any task and include *ethics and professionalism* (affective), *personal attributes* (behavioural), and *professional skills* (cognitive). These skills and the specific competencies they form are elaborated on in the paragraphs to follow (paragraph 5.4.1, page 159 to paragraph 5.4.3, page 168).

5.4.1 Ethics and professionalism

Acting ethically and professionally is vital to the CA profession. According to SAICA (2010:20), both recently qualified CAs and experienced individuals in the profession should uphold ethical principles and conduct all tasks professionally. It is essential to act with integrity, because it is fundamental to the profession's commitment to excellence and the protection of public interest (SAICA, 2010:20). The importance of acting ethically and protecting the public interest should be stressed due to recent financial scandals, such as Enron, WorldCom, BCCI, Ahold and Parmalat, in which auditors have been accused of not adhering to the high standards of ethics and professionalism expected of the audit profession (Cooper *et al.*, 2007:373).

Acting with integrity requires an individual to act according to a principle of moral soundness and display a character that exudes uncorrupted virtue, uprightness, honesty and sincerity (Oxford Dictionary, 1970:1021). According to Bakre (2007:283), integrity in the accounting field involves maintaining high professional standards, showing ethical conduct and moral integrity, and being impartial in the services they provide to the public. SAICA (2010:20) characterised a person with integrity as someone who acts honestly, ethically and with stewardship, while being objective and maintaining an independent mind when completing tasks. Simply put, acting with integrity is an innate characteristic of someone who always does the right thing, even if nobody is watching.

Table 5-3 that follows summarises the competencies that SAICA expect from CA students with regard to ethics and professionalism. Some personal attributes, which relate specifically to ethical and professional behaviour, are also stated, together with skills required to be deemed competent in these competencies.

Table 5-3: Ethics and professionalism competencies

Competency number	Competency description	Skills and personal attributes required to be deemed competent in the competency
1	Protect the public interest.	• For all assignments, adhere to the related standards; • Understand the profession's standards of competence and integrity and how these standards serve the public and protect the public interest; and • Identify ethical dilemmas in a business or government situation and make decisions that ensure the public interest is paramount.
2	Act competently with honesty and integrity.	• Understand and adhere to the profession's standards of competence and integrity; • Follow the law and the spirit of the law; • Ensure that breaches of an entity's code of conduct and unethical behaviour are reported to a supervisor so that such information is communicated to the appropriate level within the governing body (e.g. board of directors); • Act honestly; • Make transparent decisions, recognise and accept responsibility for actions and for the consequences of those decisions; and • Use all appropriate internal and or external resources in resolving ethical dilemmas.

(Source: SAICA, 2010:21-22)

Table 5-3: Ethics and professionalism competencies (continued)

Competency number	Competency description	Skills and personal attributes required to be deemed competent in the competency
3	Carry out work with a desire to exercise due care.	• Ensure that, when carrying out work, the interests of the public, the client and the employer are placed before own self-interest; • Preserve the trust inherent in fiduciary relationships with the public at large, the client, the employer and the profession; • Prepare information in such a way that the pertinent facts are fairly presented; • Interpret information in an objective manner, exercising professional scepticism when required; and • Make appropriate ethical judgements based on an understanding of the level of care expected of professional accountants in various situations.

(Source: SAICA, 2010:21-22)

Table 5-3: Ethics and professionalism competencies (continued)

Competency number	Competency description	Skills and personal attributes required to be deemed competent in the competency
4	Maintain objectivity and independence.	• Understand the principles and rules of objectivity and independence and act appropriately; • Identify and evaluate threats to objectivity in a proposed activity or decision, and implement suitable safeguards to obviate the threats or reduce the threats to an acceptably low level; and • Identify and evaluate threats to independence (both in fact and appearance) and implement safeguards to obviate the threats or reduce the threats to an acceptably low level.
5	Avoid conflict of interest.	• Understand the reasons for avoiding conflict of interest situations and be familiar with the guidelines and laws that have been developed to prevent their occurrence; • Consciously avoid real, potential or perceived conflicts of interest; and • Ensure that the interest of one party is not favoured over that of another.
6	Protect the confidentiality of information.	• Do not divulge or exploit confidential information; and • Protect against the accidental distribution of confidential information.

(Source: SAICA, 2010:21-22)

Table 5-3: Ethics and professionalism competencies (continued)

Competency number	Competency description	Skills and personal attributes required to be deemed competent in the competency
7	Maintain and enhance the profession's reputation.	• Perform work to a high standard of quality; • Understand the role of the profession within the economic and social environment of South Africa; • Understand the structure of the profession, the services which it provides to members and the requirements for membership; • Contribute to the enhancement of the profession's image; • Promote the profession; and • Practise professional courtesy.
8	Adhere to the rules of professional conduct.	• Abide by the CPC of the SAICA and, if applicable, the IRBA; • Refrain from improper conduct as defined in the SAICA By-laws and, if applicable, the IRBA Disciplinary Rules; and • Abide by the code of ethics implemented by an employer.

(Source: SAICA, 2010:21-22)

These competency requirements expect all qualified CAs or CA students to always act honestly and with integrity, and remain independent. They also expect CAs or students to apply their minds in identifying improper behaviour or circumstances that could lead to such behaviour or circumstances and, if possible, perform the right action to mitigate any threats to integrity, honesty and independence. The ability to identify issues and make sound decisions comes to light in the personal attribute competencies that SAICA expects from its members. These personal attributes are discussed next.

5.4.2 Personal attributes

Qualified CAs are expected to have developed a number of personal qualities that contour the manner in which they conduct themselves as professionals in practice. Personal attributes are defined by Dawson *et al.* (2011:291) as a person's characteristics and values. Other researchers view personal attributes as a person's values, beliefs, attitudes, interests or behaviour (Wakou *et al.*, 2003:17). SAICA (2010:23) described a CA's personal attributes as the ability to demonstrate leadership, show initiative, constantly add value and know one's limitations. Personal attributes are, therefore, the characteristics of an individual that fosters certain behaviour. SAICA (2010:23) has set certain personal attribute competencies that students and accounting professionals should demonstrate when entering practice. These include:

- Managing oneself, time and change in circumstances;
- Demonstrating leadership and initiative;
- Maintaining and demonstrating competence and recognising limits;
- Striving to add value in an innovative manner;
- Treating others professionally;
- Being a life-long learner; and
- Effectively working in a team.

These competencies and the skills and personal attributes required to be considered competent are outlined in table 5-4 next.

Table 5-4: Personal attribute competencies

Competency number	Competency description	Skills and personal attributes required to be deemed competent in the competency
1	Apply self-management.	• Ensure all assigned work is complete; assess own performance and update the professional development plan; and • On a regular basis, analyse information about the entity's performance that is pertinent to the CA's position and responsibility.
2	Demonstrate leadership and initiative.	• For each assignment, identify milestones that measure whether work is being performed on time and within budget; • Communicate with internal and external clients to assure them that milestones are being met and objectives are being achieved; • Identify opportunities, issues and possible improvements and make suggestions or recommendations to the supervisor or internal and external clients as appropriate; • Challenge assumptions; and • Contribute and lead by action and example.

(Source: SAICA, 2010:23-25)

Table 5-4: Personal attribute competencies (continued)

Competency number	Competency description	Skills and personal attributes required to be deemed competent in the competency
3	Maintain and demonstrate competence and recognise limits.	• Perform quality work with diligence and due care, based on the most recent standards or practices; • Rely on the work of others only after establishing a reasonable basis for reliance, such as sufficient evidence of their competence, their knowledge of current standards, and evidence of due care; and • Recognise the limits of own competence and voluntarily defer to others when more experience or greater expertise is necessary to complete the task successfully and, if applicable, arrange for adequate supervision.
4	Strive to add value in an innovative manner.	• Seek internal and external information pertaining to the entity that will provide insights and useful ideas that are consistent with the entity's objectives; • Identify and explore innovative alternatives before making decisions or limiting alternatives; and • Seek to improve effectiveness and efficiency of assigned tasks.

(Source: SAICA, 2010:23-25)

Table 5-4: Personal attribute competencies (continued)

Competency number	Competency description	Skills and personal attributes required to be deemed competent in the competency
5	Manage change.	• Anticipate change in the business environment and consider impact on entity's or own objectives; • For anticipated changes, provide a realistic analysis of adjustments and challenge likely to be encountered and suggest steps to deal with them; • Assess how own work is likely to be affected and show openness to change; and • Help to plan change proactively.
6	Treat others in a professional manner.	• Treat others respectfully, courteously and equitably; • Show empathy by understanding why others have a particular perspective on an issue; and • Resolve conflict and differences of opinion by focusing on issues, not personalities.
7	Be a life-long learner.	• Demonstrate intellectual ability and the ability to apply themselves at a level which enables life-long learning in the demanding context in which a CA works; • Continuously assess personal development needs; and • Actively seek appropriate learning opportunities.
8	Teamwork.	• Collaborate with colleagues and work effectively as a team member.
9	Time management.	• Respect deadlines, manage time and organise tasks logically.

(Source: SAICA, 2010:23-25)

The personal attributes that audit students need to develop during their tertiary education will assist them in showing the behavioural skills that are required from CAs in practice. The last skill that audit students are expected to demonstrate upon graduation are the professional skills which are more cognitive in nature. A discussion on these skills follows.

5.4.3 Professional skills

As noted in the introduction to generic and pervasive skills (paragraph 5.4, page 158), students studying toward becoming a CA need to develop several cognitive skills. Cognitive skills are defined as skills that form part of the thought process, such as conceptual, problem solving and critical thinking (Ballantine & McCourt Larres, 2004:179-180; Nikolai, 1996:193). SAICA (2010:26) labelled these skills as professional skills that students need to be equipped with so as to successfully apply the knowledge obtained of the various fields of specialism of CAs. These skills include a variety of intellectual and technological skills such as the creation, analysis, evaluation and synthesis of information and ideas; problem solving and decision-making skills; communication and management skills, and proficiency in technology (SAICA, 2010:26). SAICA highlighted that the more individuals get exposed to real-life experiences of practice, the further these professional skills will be developed. For this reason, the development of cognitive skills is essential if CA students are to demonstrate the competency requirements with regard to professional skills. CA students should be able to (SAICA, 2010:26):

- Obtain information;
- Examine and interpret information and ideas critically;
- Solve problems and make recommendations;
- Communicate effectively and efficiently;
- Manage and supervise; and
- Understand the impact of IT on a CA's daily functions and routines, consider basic legal concepts, and understand the national and international environment.

In demonstrating these competencies, SAICA indicated various actions to be performed that will aid in developing the required professional skills. The competencies and required actions to be demonstrated are discussed in table 5-5 that follows.

Table 5-5: Professional skill competencies

Competency number	Competency description	Required actions that assist in developing the required skills to be deemed competent in the competency
1	Obtain information.	• Gather or develop information and ideas; • Develop an understanding of the operating environment; and • Identify the needs of internal and external clients and develop a plan to meet those needs.
2	Examine and interpret information and ideas critically.	• Analyse information or ideas; • Perform computations; • Verify and validate information; • Evaluate information and ideas; • Integrate ideas and information from various sources; and • Draw conclusions or form opinions.
3	Solve problems and make decisions.	• Identify and diagnose problems and or issues; • Develop solutions; and • Decide or recommend or provide advice.

(Source: SAICA, 2010:27-31)

Table 5-5: Professional skill competencies (continued)

Competency number	Competency description	Required actions that assist in developing the required skills to be deemed competent in the competency
4	Communicate effectively and efficiently.	• Seek and share information, facts and opinions through written and oral discussion; • Prepare documents in written and graphic form; and • Present information effectively.
5	Manage and supervise.	• Plan and manage projects; • Identify the need for internal and external expertise; • Facilitate decision making; • Lead effective meetings; and • Supervise.
6	Understand the impact of IT on a CA's daily functions and routines.	• Weigh risks and merits of available tools and select the most appropriate for the task; and • Use computer applications to expedite the completion of tasks such as: - calculating information, e.g. spreadsheets; - generating information, e.g. taxation compliance software; - retrieving information; - researching information; and - protecting information.

(Source: SAICA, 2010:27-31)

Table 5-5: Professional skill competencies (continued)

Competency number	Competency description	Required actions that assist in developing the required skills to be deemed competent in the competency
7	Consider basic legal concepts.	• Seek familiarity with the structure of the legal system and legal framework within which the entity operates; • Assess the impact of relevant regulations on routine and long-term decisions; • Obtain and apply a general understanding of basic legal concepts when performing work such as breach of contract in contract law, tax case law; and • In analysing a transaction, recognise the need for guidance on the applicability of general legal concepts.
8	Understand the national and international environment.	• Demonstrate an understanding of economic, social and political fundamentals of South Africa, the Southern African region and of those countries which exert influence on South and Southern Africa.

(Source: SAICA, 2010:27-31)

In performing these actions, the student will develop the necessary professional skills so as to function effectively in practice.

5.4.4 Summary on generic and pervasive skills

This section highlighted the numerous generic and pervasive skills that aspiring CAs need to demonstrate according to the SAICA competency framework. These skills were noted as being essential to the effective functioning of the audit student in audit and accounting practice in general.

It was noted that the CA profession is committed to maintaining the confidence of clients, employers and the public by means of an overriding promise of integrity in all professional tasks. Thus, all CAs are expected to abide by the uppermost standards of integrity – they must be, and must be perceived to be, carrying out all tasks objectively and independently, in accordance with the ethical values that are expected from CAs in the making or an already qualified professional. It was further clarified that CAs are expected to develop a number of personal attributes to be able to conduct themselves as professionals in practice. Consequently, CAs are also expected to develop a wide range of professional skills that include cognitive and other technological abilities, as these skills are critical to functioning effectively and demonstrating all the competency requirements in the various specialisms which CAs are deemed to have mastered.

In conclusion, audit lecturers should not hesitate to incorporate the development of generic and pervasive skills into the curriculum followed at universities and other higher education institutions. By doing so, tertiary education institutions will deliver audit students to the marketplace who are able to meet, or even exceed, the competency requirements that practice currently demands.

5.5 Chapter summary

The purpose of this chapter was to investigate the required content of the audit curriculum to, first, identify the technical knowledge and skills required to be perceived competent in the field of auditing and assurance and to, secondly, isolate the subject content of the audit teaching-learning environment that should be considered in developing an instrument (i.e. audit simulation) to bring change to the current approach followed in audit education.

This was done by defining the term *competence* in *the context of becoming a CA*. It was noted that, in order to be deemed competent in this profession, CA students have to master a broad range of knowledge, skills, attitudes and behaviours which together result in the

ability to deliver a specified professional service such as auditing and assurance. It was further shown that competence involves embracing a professional role that values responsibility to the public and leadership in professional practice and the broader public. The competencies and skills required from audit students were identified then. In doing so, it was established that the subject content and other skill requirements of CA students are governed by SAICA and that audit lecturers need to incorporate these requirements into their syllabi.

This was followed by identifying the various services performed by auditors in practice. The argument was made that the numerous audit standards, legislation and other statements should be included in the audit curriculum. It was further stated that, to obtain the competencies for *auditing and assurance* and be able to apply theory to practice, knowledge of this *subject content* is required, together with a deep understanding of these requirements. The process in which this knowledge is applied was also identified and discussed. A summary on auditing and assurance, as the field of specialism for audit students in particular, was then provided.

Following the subject specific competency requirements, the importance of *generic and pervasive* skills was highlighted, and the inclusion thereof into audit curriculum was argued. This was followed by an identification of the generic and pervasive skills which graduates completing the CA qualification should be able to demonstrate. This investigation pointed out that CAs are expected to develop a wide range of soft skills which include cognitive and other technological abilities such as ethical behaviour, professionalism, personal attributes and professionals skills. The criticality of mastering these skills was also emphasised. This was followed by a summary on the generic and pervasive skills, together with a statement on the importance of incorporating these skills into audit curriculum.

In summary, Aristotle said: “It is the mark of an educated mind to be able to entertain a thought without accepting it” (Aristotle, 2014). If audit lecturers could develop audit curriculum which do not only incorporate content requirements, but also assist students in developing generic and pervasive abilities, students would be able to master the audit subject concepts, have the ability to think about these concepts before accepting them and, consequently, be able to apply these concepts successfully in practice. In doing so, students would have an educated mind when it comes to the audit subject, and the call for change in audit education could be answered to a great extent. The next chapter is a discussion of how the author attempted to bring change to audit education by incorporating the findings and conclusions made throughout chapters 3 to 5 into the development of an audit simulation.

Chapter 6

Development of the simulation and supporting material

*“Tell me I forget; show me I remember; involve me I understand.” – Ancient Chinese Proverb
by Carl Orff*

6.1 Introduction

Chapters 3 (page 55) to 5 (page 138) investigated all the variables of the audit teaching-learning environment that need to be considered when attempting to change audit education in general. These variables are the *audit lecturer* and the *audit classroom* (milieu), the *audit student*, and the *audit subject content*. This chapter discusses the development of a new audit simulation project and supporting substance, which addresses the sixth secondary research objective, as stated in the introduction (paragraph 1.5, page 15).

The previous chapters (chapters 3-5) indicated clearly that all the variables in the audit teaching-learning environment do contribute to bringing change to the current approach followed in audit education. In chapter 3 (page 55) the following points were made:

- It is vital that audit lecturers consider their personality and continue to develop personality attributes so as to enrich student learning (paragraph 3.2.1.1, page 68);
- Audit lecturers should be able to communicate and incorporate social media as a means of communication with their students (paragraph 3.2.1.2, page 69);
- Audit lecturers should not only motivate students by applying methods that support intrinsic rather than extrinsic motivational behaviours, but also be more student oriented and responsive to student needs and concerns (paragraph 3.2.1.3, page 73);
- Audit lecturers should show commitment to a process of CPD to remain knowledgeable and well informed regarding recent developments in the field (paragraph 3.2.1.4, page 77);
- Audit lecturers should present well-prepared lectures and be open to new technologies in presenting their lectures (paragraph 3.2.1.5, page 78);

- Audit lecturers should not simply apply methods that suit their needs and preferences, but apply a teaching methodology that will meet the audit students' needs, enhance their understanding of the audit subject content, and develop important skills such as critical thinking, problem solving and other soft skills (teaching methodology summary, paragraph 3.2.2.4, page 93);
- Audit lecturers should assess the knowledge level of students continuously and not only in a summative evaluation (paragraph 3.2.3, page 97); and
- It is imperative that audit lecturers create an audit classroom that replicates audit practice by applying experiential learning techniques such as simulations and games (audit classroom summary, paragraph 3.3.3, page 107).

Chapter 4 (page 110) discussed the student as a variable in the audit teaching-learning environment and emphasised the following:

- The learning approach that students apply in general affects the quality of the learning outcomes they achieve (paragraph 4.2.1.1, page 114);
- Students sometimes have a preferred orientation toward, or an intention to use, a deep or surface approach to learning in the light of their personal characteristics. Ultimately, it is the students' perception of the teaching-learning environment that will lead to or prevent a specific learning approach from being used (paragraph 4.2.1.1, page 114);
- The more positive the students' perception of the variables in the teaching-learning environment, the greater the probability that students will apply a deep learning approach. In contrast, if students perceive the variables in the teaching-learning environment negatively, they tend to follow a surface approach to learning (paragraph 4.2.1.2, page 117);
- The use of (i) formative assessment and feedback approaches and (ii) active teaching methodologies such as case studies and simulations, as well as (iii) the presence of effective lecturer characteristics, such as being supportive and helpful to students, would stimulate students to adopt a deep approach and discourage the use of surface approaches in accounting and audit education, which is the current norm (paragraph 4.2.1.2, page 117);
- Students tend to approach subjects with a high workload, such as the audit subject, with surface learning. However, no evidence was found to support the view that positive

perceptions on the workload requirements of subject content would result in a deep approach (paragraph 4.2.1.2, page 117);

- A deep learning approach contributes to achieving high-quality learning outcomes such as critical thinking (paragraph 4.2.1.3, page 121);
- It is imperative that audit students adopt a deep approach (summary on learning approaches, paragraph 4.2.1.4, page 122);
- Gender seems to have an impact on performance in the audit subject specifically. It seems, however, that skills associated with the specific gender, such as prioritising, methods of study and organisational skills, rather than being male or female, have an effect on performance in the audit subject (paragraph 4.2.2.1, page 125);
- The quality of students' primary and secondary education and whether they have obtained prior knowledge at either primary and secondary level or elsewhere will affect their learning (paragraph 4.2.2.1, page 125);
- It seems that younger students perform better than their older counterparts (paragraph 4.2.2.1, page 125);
- Studying in one's mother tongue was shown to be advantageous to students (paragraph 4.2.2.1, page 125);
- Race and ethnicity can have an impact on success in the accounting field (paragraph 4.2.2.1, page 125);
- The enrolment status of students was found to have an effect on student performance. Despite the assumption that full-time students have an advantage and outperform part-time students, a study found that the work experience obtained by part-time students has a more significant effect while studying from their second year onwards (paragraph 4.2.2.1, page 125);
- Cultural backgrounds and students' perceptions on whether universities or other higher education institutions can contribute to their learning experience have an effect on their performance (paragraph 4.2.2.1, page 125);
- Class attendance plays an important role in student success (paragraph 4.2.2.1, page 125);

- Students' self-expectations, self-confidence, prior academic achievement and motives for studying an accounting qualification have an impact on their success (paragraph 4.2.2.1, page 125);
- Duration of studies is a factor that affect student performance (paragraph 4.2.2.1, page 125); and
- Endogenous factors influence student learning, such as (paragraph 4.2.2.3, page 133):
 - Teaching methodologies;
 - Lecturer approachability;
 - Clarity of examination questions;
 - Usefulness of mid-term tests and homework;
 - Sufficiency of class time;
 - Relevance of the module content;
 - Insufficient communication;
 - A lack of motivation; and
 - The quality of the supplemental instruction they are receiving are not frequent enough or effective.

The last variable in the audit teaching-learning environment indicated that the content of the audit subject field affects the approach that is followed in audit education today. The following was noted from chapter 5 (page 138):

- Auditing and assurance as part of the SAICA competency framework includes several abilities that students need to have mastered specifically in the audit subject (paragraph 5.3, page 142);
- Auditors perform a variety of services in practice, resulting in numerous audit standards, legislation and other statements being included in the audit subject content (paragraph 5.3, page 142);
- The auditing and assurance specialism contains several competencies that need to be mastered by audit students (paragraph 5.3, page 142);

- Competencies are obtained by not only acquiring the knowledge of the various audit standards, legislation and other statements, but also developing an understanding of these requirements and having the ability to apply the theory in practice by following the audit process (paragraph 5.3, page 142);
- Audit lecturers at universities or other higher education institutions need to develop the audit curriculum so as to not only incorporate the content requirements, but also assist students in developing the abilities to be deemed competent in the field of auditing and assurance (summary on auditing and assurance, paragraph 5.3.1, page 157);
- An effective implementation of the competency framework, which does not simply focus on the technical content, but also on the development of competencies in auditing and assurance, will assist in transforming the approach to audit education and deliver audit graduates who are deemed competent on arrival in practice (summary on auditing and assurance, paragraph 5.3.1, page 157);
- Aspiring CAs need to demonstrate numerous generic and pervasive skills according to the SAICA competency framework (paragraph 5.4, page 158); and
- These skills are essential to the effective functioning of the audit student in audit and accounting practice in general and include ethics and professionalism (affective), personal attributes (behavioural), and professional (cognitive) skills (summary on generic and pervasive skills, paragraph 5.4.4, page 172).

From these findings, it is evident that several factors need consideration before an attempt can be made to bring change to the audit classroom at universities or other higher education institutions.

The remainder of this chapter provides a discussion of how these findings were incorporated into the development of a new audit simulation project and supporting substance that can assist in an attempt to address the various criticisms against the audit pedagogy. The discussion starts by highlighting some of the current criticisms against audit education found in the literature. Then, an investigation follows into the previous use of simulation projects in audit education, why they are beneficial to the audit teaching-learning environment, as well as the results of simulations performed in other studies. The general motivations and criticisms against using simulations as an instrument to teach auditing at universities or other higher education institutions are stated, together with how the development of this new audit simulation project, which encapsulates all the variables in the audit teaching-learning environment, will assist in bringing change to the audit classroom.

The general factors for consideration in simulation design follows. The development of the new audit simulation, by the author, as an instrument that contributes to bringing change to the current approach to audit education is explained, as well as how the development was done based on the framework established for simulation design.

6.2 Criticisms in audit education

Auditing courses in the general sense are concept oriented and students often struggle to relate to these ideas due to a lack of a clearly developed and adequate frame of reference to analyse and understand auditing concepts (Arens *et al.*, 1970:573). Siegel *et al.* (1997:218) support this notion by stating that audit students at higher education institutions have a lack of experience with transactions and activities which constitute the subject matter of auditing. These researchers mentioned that this lack of “feel” introduces a roadblock for students toward comprehending basic audit concepts and ideas and results in a lack of academic performance in this subject field (Siegel *et al.*, 1997:218).

This lack of understanding and conception of audit models has been evaluated by various researchers in the accounting education space such as Hosal-Akman and Simga-Mugan (2010:251) and Steenkamp and Von Wielligh (2011:9). From this, various criticisms have emerged of the methods that audit educators apply to aid students in grasping audit at under- and postgraduate level.

The first of these criticisms refer to the teaching approach followed by audit educators (Hosal-Akman & Simga-Mugan, 2010:251; Steenkamp & Von Wielligh, 2011:9). Courses in accounting degrees frequently apply out-dated methods and follow a passive learning approach which requires students to sit down in a classroom and just listen to the lecturer, with no active involvement in the learning process (Hosal-Akman & Simga-Mugan, 2010:251; Siegel *et al.*, 1997:217; Steenkamp & Rudman, 2007:23). This passive technique of conveying auditing theory to untried young auditors has, in numerous instances, rendered poor results when their audit knowledge was put to the test (Siegel *et al.*, 1997:218). Botha (2001:42) critiqued the assessment of audit students' competence by means of a written examination and expressed concern as follows:

“... demonstrating that one can successfully negotiate a written examination, which primarily tests knowledge, is not the same as possessing the skills and attitudes required for professional practice. It is wrong to claim that a final written qualification examination, which in essence tests a student's knowledge, is an assessment of a practitioner's competence”.

Although these two criticisms have been highlighted by several other studies, such as Barac (2012:47), the predominant issue in audit education relates to the absence of practical experience provided by audit training, as indicated by Barkman (1998:517), Tonge and Willett (2012:171) and Worrell (2010:538). These researchers stressed the importance of introducing students to actual situations, i.e. by developing case studies or simulations that will enable them to actively participate in the learning process and, therefore, be exposed to some form of practical experience (Barkman, 1998:517; Tonge & Willett, 2012:171; Worrell, 2010:538). These studies highlighted the problems that have been evident in audit education since the 1970s despite the recent call to change the teaching approach and attempts by other accounting education researchers to answer this call on an international scale.

The previous use of and the motivation for employing simulations as a teaching methodology that can bring change to audit education are discussed next.

6.3 Previous use and outcome of simulations in audit education

As noted in chapter 1 (paragraph 1.2, page 11), a variety of audit simulations have been developed to assist audit students at higher education institutions to comprehend the audit of financial statements. The purpose of this literature review is to provide an overview of what has been done in the past in order to identify limitations and areas for further research to be addressed in this study.

Arens *et al.* (1970:573) designed a simulation project that provided a frame of reference from which to discuss factors that affect auditors' decisions in developing audit programs and determining the extent to which a financial statement account should be audited. During this project, students had little opportunity to physically perform the audit procedures they developed for inclusion into the audit program.

A simulation model for applying audit-sampling techniques was reported on by Walgenbach and Frank (1971:283) from the University of Wisconsin in the early 1970s. In this paper they added to the existing computer-simulated audit that students enrolled for auditing courses at this university had already been performing (Walgenbach & Frank, 1971:583). Since then, no other literature has been identified that contains the audit-sampling process as part of a simulation. A number of years later, Weber (1978:368) established a model to aid auditor decision making in overall system reliability. Weber's paper examined some facets of the

external auditor's judgment process in evaluating the overall reliability of internal control for a company's inventory system.

Krogstad *et al.* (1986:309) investigated the impact of a simulation of audit practice on students' attitudes and perceptions about a variety of factors pertaining to auditing. These factors included (i) the importance of human relations skills; (ii) professionalism; (iii) prerequisite knowledge of accounting and auditing standards; and (iv) career opportunities in auditing (Krogstad *et al.*, 1986:309). In this study simulations were shown to be an effective tool to assist students in experiencing some aspects of the audit process.

Siegel *et al.* (1997:217) made use of a video simulation of an audit. They reported the results of a controlled experiment carried out to apply experiential learning theory to the teaching of auditing (Siegel *et al.*, 1997:217). In this experiment a series of videotapes were provided to students to equip them with a view of what essentially occurs in an audit. These video tapes formed part of an active learning approach in which the videos were applied as visual aids (Lasley & Ornstein, 2004:297; Gawe *et al.*, 2012:215) to enhance students' understanding of what actually takes place during the audit process.

In 2001 Gelinas *et al.* (2001:603) constructed a simulation where audit students were introduced to using CAATs in the audit process. In this simulated audit participants were made accustomed to using audit software in performing audit procedures, as well as to identifying audit risks and setting an audit approach. This resulted in improved audit technology and critical thinking skills (Gelinas *et al.*, 2001:610).

Borthick and Curtis (2004) reported on the use of an audit simulation for due diligence on fashion inventory through data querying. While performing this project students designed audit procedures to test the audit assertions such as completeness and existence with regard to inventory. They reported on the findings and unresolved issues, together with the lessons learned from this study (Borthick & Curtis, 2004). The learning objectives of this simulation entailed developing essential skills, such as verification on internal consistency of accounting records, and detecting other issues that would require further investigation by the auditor (Borthick & Curtis, 2004). This experience offered students the opportunity to bridge the gap between theory and practice.

Steenkamp and Rudman (2007:23) studied the usefulness of an audit simulation by obtaining student perceptions at a South African university. In this study students had to prepare working papers pertaining to the auditing of inventory and a database large enough for students to make use of IT to assist them in the process (Steenkamp & Rudman,

2007:23). This study also indicated that significant value is added to student learning when a simulation is employed.

In more recent years, Miller and Savage (2009:93) developed an audit simulation to help students in applying auditing procedures that pertain to revenue recognition. In particular, the students gained a better understanding of the importance of management's occurrence, accuracy and cut-off assertions regarding revenue and how the connection is made between an auditing procedure and an audit assertion (Miller & Savage, 2009:93). This simulation further endeavoured to give students the opportunity to physically perform audit procedures regarding revenue and to document their findings on working papers (Miller & Savage, 2009:93). The project included four types of audit misstatements that students had to identify. This was supported by audit partners of the Big 4 audit firms who stated that (Miller & Savage, 2009:100):

“This project provides a great opportunity for students to enhance their understanding of the audit procedures. While learning the fundamentals of auditing is important, it is also equally important to know how to apply audit and accounting principles in a real auditing situation. This simulation challenges students to think beyond the textbook and practically apply what they have learned in the classroom. If a student can fully grasp the thinking process and skills needed to complete a simulation such as this one, they can develop a good sense of what to expect in audit fieldwork and also foster their professional scepticism and enhance their judgment.”

Worrell (2010:527) developed a simulation focusing purely on the procurement section of an audit. In this audit simulation, audit procedures were conducted as part of a business process unit. Students were guided in understanding audit work pertaining to procurement by providing them with a realistic setting in which to conduct those audit procedures that interns and entry-level auditors are expected to perform (Worrell, 2010:527). Worrell introduced the use of blended learning by adding interviews with clients in MP3 file format to assist students in obtaining some of the required information to perform the audit procedures. Worrell (2010:529) concluded that audit simulations effectively simulate a real-world audit and are immensely treasured by students, not only in developing audit skills, but also in helping to stimulate interest in the audit profession.

Bagley and Harp (2012:1131) reported on the use of an audit simulation in auditing the property, plant and equipment (PPE) and depreciation section of the financial statements of a simulated client.

Students were provided with electronic working papers that included an audit program, client-prepared documents, and prior year working papers (Bagley & Harp, 2012:1131). This simulation had several objectives: first, to familiarise students with electronic working papers and exposing them to Microsoft Excel in an audit environment; secondly, to provide students with the opportunity to audit PPE and its related depreciation expense by applying substantive analytical and detail testing; thirdly, to test the evaluation of internal control and its implications on the audit approach; and, lastly, to develop soft skills such as writing and client interview skills.

Tonge and Willett (2012:171) introduced an audit simulation in the form of a financial systems audit or review for a large local charity. They anticipated that performing a genuine audit activity for a real “client” would bring exclusive benefits, for example, motivation to obtain and apply technical expertise (Tonge & Willett, 2012:172). In addition, students experienced working under pressure in small teams, which encouraged teamwork and communication skills. This project covered audit sections such as risk management, revenue and procurement (Tonge & Willett, 2012:175).

Very recently, Botha (2014:16) conducted a study with the primary objective to evaluate whether the learning and lecturing difficulties experienced by audit students might be addressed effectively by means of an educational, technology-based game with auditing information as content. Such a game was developed during the course and as a result of the study. The study found that the use of a computer game as an educational tool was equal in educational value to the case method and simulation method. Furthermore, factors relating to the audit student (discussed in chapter 3) such as joy, engagement and motivation, were rated higher for the computer game than for the case method (Botha, 2014:5).

From these research studies on simulations as instructional tool in audit education, it is evident that simulations do indeed create an opportunity for students with very little practical experience to master the audit subject. Although these studies have contributed significantly to audit education literature globally, a number of gaps in audit simulations, demonstrating an overview of the whole audit process, have been identified by the author. The literature in a South African context also showed these shortcomings. Against this backdrop, a discussion follows on the motivation for developing a new audit simulation to enhance audit students’ perceived broad competence.

6.4 Motivation for a simulation approach to audit education

The studies cited above have developed audit simulations that added significant value to audit education at specific higher education institutions around the world. Nevertheless, the limitations and areas for further research noted in these studies deserve attention and were incorporated into the development of the new audit simulation.

The previous studies, as noted in the literature review in this chapter (paragraph 6.3, page 180) and chapter 1 (paragraph 1.2, page 11), have primarily focused on certain stages of the audit process, with the execution stage being highlighted in several instances. The pre-engagement and completion and reporting stage of the audit process have not received much attention from researchers and can be viewed as a shortcoming in audit education and research. There is also a clear gap in the existing literature with regard to the use of blended learning (paragraph 3.2.2.3, page 91) and other active teaching methodologies in auditing, such as cooperative learning techniques, which involve group work where individuals work toward to same objective (i.e. completion of an audit) (paragraph 3.2.2.2, page 83).

No comprehensive local or international studies that include all the steps in the audit process and the majority of the audit subject content were identified throughout the literature review. This finding clearly warrants and emphasises the great need for the development of a comprehensive audit simulation that incorporates not only all the steps in the audit process, but also a simulation that will address the various factors in the audit teaching-learning environment.

A newly developed simulation would make a significant contribution to audit education because it needs to be comprehensive and aligned with the latest auditing standards and other legislation. This simulation should be implemented at universities, training offices and other higher education institutions globally. Thus, such a project will aid audit educators around the world in preparing audit students for the hard reality of practice and fostering the change that needs to take place in the approach in educating audit students. This simulation will not only cover the technical audit skills addressed in other simulations, but will also, purposely, address various soft skills (generic and pervasive skills). The following paragraphs provide the motivation for the use of simulation in the audit classroom.

6.4.1 Motivation and criticism of simulation use in accounting education

An abundance of studies have been conducted on the use of simulations as active learning tool in accounting and audit education and have recognised the significant effect this tool can have in enabling students with little practical experience to understand audit (e.g. Knechel, 1989:411-419; Hoffjan, 2005:63,70; Fouché & Visser, 2008:599; Giroux & Pasin 2011:1246).

Chapter 3 (paragraph 3.2.2.2, page 83) highlighted the advantages and disadvantages of simulation use, indicating that the advantages outweigh the disadvantages. It was noted that simulation use adds to the learning process because it (paragraph 3.2.2.2, page 83):

- Creates a *positive attitude toward learning*;
- *Inspires engagement* in the learning process;
- *Encourages learning*;
- Provides *opportunities for integration and application learning*;
- Brings an *element of business reality* to the classroom;
- *Reduces issues of slacking* that is caused by traditional teaching methods;
- Provides *soft-skill practice* that includes *teamwork, collaboration and interpersonal social skills*;
- *Stimulates students and motivates* them to participate more actively than in a conventional classroom situation;
- *Increases the ability to recall factual knowledge*;
- *Improves problem solving skills*; and
- *Engages participants actively* in the learning process which, in turn, *enhances learning effectiveness*.

Simulations, however, have disadvantages. These include (paragraph 3.2.2.2, page 83):

- *Time constraints*;
- *Possible confusion* from a student perspective about what is expected of them;

- *Frustration with technical difficulties* in the simulation; and
- *Lecturers' struggling to provide feedback and answer questions* when the simulation takes place outside of class time.

Based on the above-mentioned findings, and despite the disadvantages described above, it can be concluded that the use of simulations which are up to date with all the requirements for conducting audits in practice will contribute to bringing change to audit education. The following section discusses first how the newly developed simulation will aid in transforming audit education. The focus then shifts to how this simulation increases the effectiveness of the audit lecturer, the audit student and the audit classroom in the process of teaching and learning while incorporating the subject content requirements into audit curriculum at tertiary level. The latter will result in an effective overall audit teaching-learning environment.

6.4.2 Specific motivation for the newly developed simulation in audit education

The author is of the opinion that the newly developed simulation will aid in establishing an effective overall audit teaching-learning environment and bring about change in audit education because it will:

- Assist the audit lecturer (paragraph 6.4.2.1, page 186);
- Assist the audit student (paragraph 6.4.2.2, page 187); and
- Assist in incorporating the subject content and competency requirements into the audit curriculum (paragraph 6.4.2.3, page 188).

The following paragraphs discuss the way in which the simulation provides the assistance as mentioned above and how the requirements were incorporated into the simulation design, in paragraph 6.5 (page 188).

6.4.2.1 Assisting the audit lecturer

The newly developed audit simulation will assist audit lecturers by addressing the various factors that affect them, as indicated earlier (paragraph 6.1, page 174), because it will:

- Contribute to the continuous development of attributes that form part of their personality to enrich student learning;

- Enable effective communication and incorporate social media as a means of communication between themselves and their students;
- Motivate students by applying methods that support intrinsic rather than extrinsic motivational behaviours and that are more student oriented and responsive to student needs and concerns;
- Enhance audit lecturers' commitment to a process of CPD so as to remain knowledgeable, well informed, and be able to discuss recent developments in the subject field;
- Aid in preparing for lectures and provide lecturers the opportunity to use new technologies in presenting their lectures;
- Result in a teaching methodology that will meet the audit students' needs, enhance student understanding of the audit subject content, and develop important skills such as critical thinking, problem solving and other soft skills;
- Enable the lecturer to assess the knowledge level of students on a continuous basis and not just in a summative evaluation; and
- Set the audit classroom as a milieu that replicates audit practice by applying experiential learning techniques such as simulations.

6.4.2.2 Assisting the audit student

The newly developed audit simulation will assist audit students by addressing the various factors that affect them, as indicated earlier (paragraph 6.1, page 174), because it will:

- Aid in establishing a positive perception of the variables in the audit teaching-learning environment which would result in a greater probability that students will apply a deep learning approach;
- Contribute to achieving high-quality learning outcomes such as critical thinking; and
- Eliminate the negative impact of endogenous and exogenous factors on student achievement.

6.4.2.3 Assisting in incorporating the subject content and competency requirements

The newly developed audit simulation will assist in students' mastering the various content and competency requirements of the SAICA competency framework, as stated earlier (paragraph 6.1, page 174), because it will:

- Incorporate the majority of the subject content requirements;
- Aid in developing the competencies required in the auditing and assurance specialism; and
- Aid in developing the generic and pervasive skills that audit students should possess after graduation and before entering professional practice.

6.4.2.4 Summary of the motivation for a newly developed audit simulation

From paragraph 6.4.2.1 to 6.4.2.3, it is evident that the development of a new audit simulation will assist all the variables in the audit teaching-learning environment. This newly developed audit simulation needs to be developed in such a way that it both incorporates both the advantages of simulation use (paragraph 6.4.1, page 185) and attempts to mitigate the disadvantages.

The remainder of this chapter explains how the new audit simulation was developed based on a framework for simulation design established by the author. It also indicates how the simulation was developed to incorporate the general and specific motivations for this endeavour, as stated earlier (paragraph 6.4.2, page 186).

6.5 Simulation design

As mentioned in the problem statement (paragraph 1.3, page 15), it is essential that intervention takes place with regard to the audit education approach followed at universities and other higher education institutions. The *overarching primary objective* of this study was also stated, namely to intervene and assist in the process of bringing change to the current approach followed in audit education. This was primarily done by developing an instrument, i.e. the audit simulation, which can be implemented by universities and other higher education institutions both locally and globally.

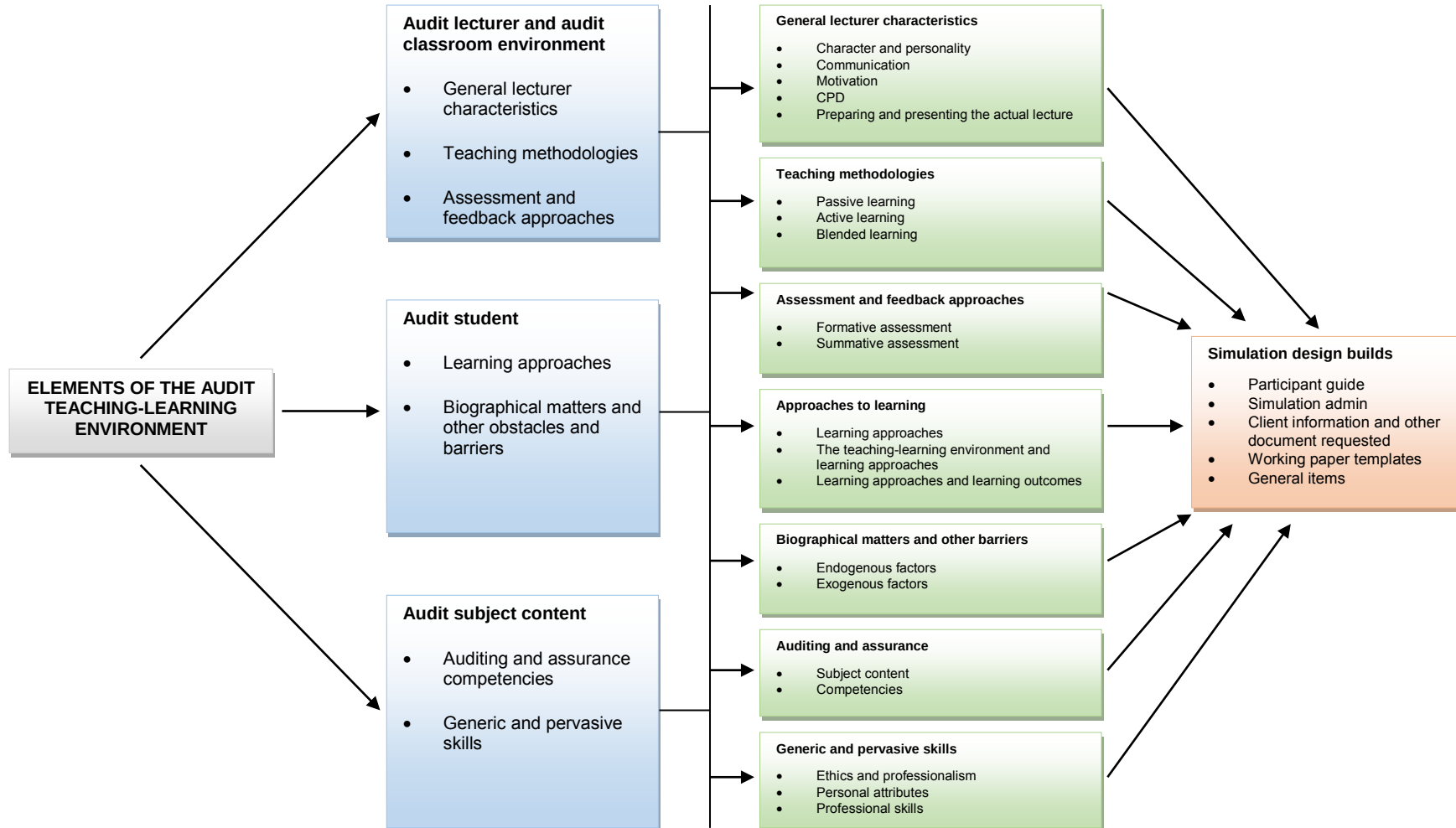
As a starting point to developing the audit simulation project, the author conducted a literature review to identify a framework for simulation design. This was done in order to (Jeffries, 2005:97):

- Specify all the relevant variables that need consideration;
- Ensure that the research in developing simulations in general is conducted systematically; and
- Mitigate issues that would result in ineffective development and practice.

According to Fouché (2006:131), simulations and games that are used for educational purposes need to be designed effectively and incorporate all the variables in the overall teaching-learning environment.

That being said, from the extensive literature review reported on in chapters 1 to 5 and in the introduction to this chapter, the author could not identify a framework for simulation design that incorporates **all** the variables in the **overall audit teaching-learning environment** as identified and discussed throughout this study. The author, therefore, attempted to develop a framework that could be applied in designing the new audit simulation and that includes the specific motivations with regard to the variables of the audit teaching-learning environment, as noted from the literature review in chapters 3 (page 55) to 5 (page 138) discussed earlier (paragraph 6.4.2, page 186). In so doing, the fifth secondary research objective of this study was addressed (paragraph 1.5, page 15). Figure 6-1 demonstrates the framework for simulation design developed by the author.

Figure 6-1: Framework for simulation design



(Source: Author)

As noted previously (paragraph 6.4.2, page 186), the factors that affect the variables in the audit teaching-learning environment need to be incorporated into the newly developed audit simulation. From figure 6.1, it is evident that the framework for simulation design incorporates all the variables in the audit teaching-learning environment discussed in this thesis. The next step was to develop five primary builds in the design of the simulation which comprised the physical substance of the newly developed audit simulation. These included the:

- Participant guide (**PG**);
- Simulation admin (**SA**);
- Client information and other documents requested (**CI**);
- Working paper templates (**WP**); and
- General (**G**).

These builds were used to develop the audit simulation entitled ***Finance Master (Pty) Ltd, an audit simulation performed by R&R Auditors Inc.*** In this audit simulation, the client that was audited was referred to as Finance Master (Pty) Ltd, whereas the students performed the role of R&R Auditors Inc. The builds and their relevance to the audit simulation are clarified in the discussion that follows.

Participant guide (PG)

The participant guide contains all the subject content requirements, client background and information, instructions and guidance needed for the tasks to be performed by the students in completing the audit simulation. In order to successfully perform the audit simulation, students need to read this guide from start to finish and follow instructions in each step of the audit process.

Simulation admin (SA)

The simulation admin build contains a variety of documents to be used throughout the audit simulation, such as a kick-off meeting agenda and a team member's assessment document. During the different sections of the audit simulation, students are referred to the relevant documents when needed.

Client information and other documents requested (CI)

This build comprises a variety of client documents (audit evidence) needed to perform the tasks for each section of the audit simulation such as invoices, bank statements and loan contracts.

Working paper templates (WP)

All the working paper templates required to perform the tasks are provided to the audit teams (the participants) in either Microsoft Word or Microsoft Excel format. These working papers need to be completed by the participants in the audit simulation.

General (G)

The general build represents other tangible and intangible aspects of the audit simulation. Tangible aspects include the use of flyers and banners as visual aids, whereas intangible aspects are, for example, the application of effective lecturer characteristics such as being friendly and approachable during the audit simulation. It further represents intangible generic and pervasive skills such as teamwork ability.

The complete audit simulation and its supporting substance developed by the author are attached in **annexure M** (page 488).

The remainder of this chapter emphasises how the specific motivations with regard to the variables of the audit teaching-learning environment discussed earlier (paragraph 6.4.2, page 186) were integrated into the five primary builds on which the simulation development was based.

6.5.1 Assisting the audit lecturer

Paragraph 6.4.2.1 (page 186) mentioned the factors that need to be included in the audit simulation to assist the audit lecturer in bringing change to audit education. Table 6-1 that follows illustrate how these factors were incorporated into the development of the audit simulation and in which build(s) of the simulation the factors were integrated and addressed. The required factors are listed in the first column, and the way in which they were incorporated into the audit simulation is explained next to each factor. The contribution of each factor to bringing change to audit education, as noted throughout chapter 3 (page 55), is stated below the relevant factor. The build(s) into which the factors were incorporated and addressed are indicated horizontally with a “√”.

Table 6-1: How the newly developed audit simulation assisted audit lecturers

Factors (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Continue the development of attributes that form part of their personality to enrich student learning.	While students perform the simulation, audit lecturers act as the facilitator and apply personality traits of an effective lecturer such as being friendly, respectful, impartial, compassionate and selfless by putting the students' needs before their own and being approachable. The lecturers therefore make the conscious decision to display these personal characteristics while having contact time with the students during the audit simulation (paragraph 3.2.1.1, page 68).					√
Contribution to bringing change to audit education: By applying these characteristics, the audit lecturers' likability will increase, as will the students' ability to relate to the lecturers' personality. This, in turn, will have a positive impact on the students' attitude toward the audit subject and positively contribute to their learning process and experience. In addition, the lecturers are presented with an opportunity to further develop these personality traits (paragraph 3.2.1.1, page 68).						

Table 6-1: How the newly developed audit simulation assisted audit lecturers (continued)

Factors to be included (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Enable effective communication and incorporate social media as a means of communication between themselves and their students.	A Facebook page was established as the main communication medium between the audit lecturer and the audit students during the simulation. A QR code (a machine-readable code consisting of an array of black and white squares, typically used for storing URLs) was developed which students could scan with their mobile phones to gain easy access to the Facebook page, in addition to logging onto Facebook on a computer (see annexure J, page 485).					√
Contribution to bringing change to audit education: Facebook as communication medium will assist in establishing the credibility of the lecturer from a student perspective and stimulating the desire of students to learn, seeing that they are familiar with technological methods of communication. Also, this medium will help communicating the content of the subject when students have any questions regarding the simulation. It further serves as a medium to bridge the issues of individualism, collectivism and the language proficiency levels of students as all students are able to use this social medium. In so doing, students will gain self-confidence to ask questions; to have a better understanding of the subject content because they are now able to ask questions; and to be motivated to communicate with the audit lecturer. The lecturer will soon see the benefits of using Facebook in the audit classroom (paragraph 3.2.1.2, page 69).						

Table 6-1: How the newly developed audit simulation assisted audit lecturers (continued)

Factors to be included (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Motivate students by applying methods that support intrinsic rather than extrinsic motivational behaviours and that are more student oriented and responsive to student needs and concerns.	Several methods were applied to intrinsically motivate students:					
	The simulation was developed in such a way that students should find it interesting and be able to relate to the information given (e.g. by using characters that the majority of the students could relate to such as television personalities, and suppliers and customers names that relate to well-known entities such as ASKOM (Eskom).	√		√		
	As a method of team building and obtaining a feeling of self-interest, students were given the opportunity to develop their own team names and slogans to be posted on the Facebook page (see annexure K, page 486).					√
	Students were encouraged to take photos of the team while performing the simulation and upload these onto the Facebook page (see annexure L, page 487).					√
	Students were given the choice as to when, where and how they wanted to set their work plan to perform the audit simulation.					√
	The purpose of the simulation and the required tasks to be performed throughout the simulation were stated clearly.	√				√

Table 6-1: How the newly developed audit simulation assisted audit lecturers (continued)

Factors to be included (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Motivate students by applying methods that support intrinsic rather than extrinsic motivational behaviours and that are more student oriented and responsive to student needs and concerns (continued).	Some extrinsic motivational methods were also applied:					
	The benefits of performing the simulation were explained to students during the introduction session, for example, they will obtain a holistic view of the audit process and be in a better position to understand and apply the various concepts in the audit subject after completion of the simulation (see annexure F, page 447 and annexure I, page 484).	√				√
	A prize was offered to the audit team with the most creative team name and slogan and the most prominent presence on the Facebook page (see annexure H, page 449).					√
Contribution to bringing change to audit education: In applying these methods of motivation, the lecturer is required to be more student centred and should encourage students to learn. Consequently, more long-term interest in the subject, together with the development of spontaneous satisfaction when studying the subject content, will be intrinsically fostered within the student. It will encourage the student to actively explore the subject and master the required outcomes which will, ultimately, create a feeling of satisfaction and accomplishment. Finally, the lecturer will add to the learning experience of students and produce students who are motivated to learn and understand the audit subject. It further serves as a platform to expose the lecturer to the various forms of motivation and emphasise the benefits of intrinsic motivation (paragraph 3.2.1.3, page 73).						

Table 6-1: How the newly developed audit simulation assisted audit lecturers (continued)

Factors to be included (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Enhance the audit lecturers' ability to show commitment to a process of CPD so as to remain knowledgeable, well informed, and be able to discuss recent developments in the subject field.	Several methods were incorporated into the simulation design that would assist the lecturer to develop skills and to show commitment to a process of CPD:					
	Facebook was used as a communication medium between the students and the facilitator of the simulation project (see annexure J, page 485).					√
	The Prezi presentation tool was employed in introducing students to the simulation (see annexure H, page 449).					√
	Other technological methods such as Go Animate was used to develop the videos incorporated into the simulation (see annexure M, page 488).	√		√		√
	The simulation was based on most recent standards and legislation.	√				
Contribution to bringing change to audit education: Audit lecturers need to ensure that they remain up to date with the developments in the profession and not fall back on the knowledge they obtained in their journey of becoming an audit lecturer. Their commitment to CPD will ensure that they remain knowledgeable and well informed to be able to discuss recent developments in the subject field and, ultimately, be respected as competent lecturers by their students. By incorporating the use of technologically advanced tools and the most recent standards and legislation into the simulation, lecturers will enhance their ability to be self-directed learners, to remain knowledgeable, to have knowledge of new developments and be well informed on course content (paragraph 3.2.1.4, page 77).						

Table 6-1: How the newly developed audit simulation assisted audit lecturers (continued)

Factors to be included (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in preparing for lectures and assist in giving lecturers the opportunity to use new technologies in presenting their lectures.	A vast amount of preparation was needed for presenting the simulation to students in the classroom:					
	The simulation was introduced to students by means of a well-prepared Prezi presentation (technological tool) that was visually appealing and interesting to students (see annexure H & I, page 449 to page 484).					√
	During the presentation of the audit simulation, students were provided with flyers instead of a set of PowerPoint slides (see annexure F, page 447).					√
	Banners that were visually attractive and aided in encouraging student participation were presented at the introduction session (see annexure G, page 448).					√
Contribution to bringing change to audit education: This will contribute to increasing the willingness of the students to learn, because they will be motivated and encouraged to take part. In this way, the learning needs of individual students are accommodated which will, ultimately, stimulate the learning experience of the student. The Prezi tool, with its unique presentation and learning features, can be used to motivate students, encourage their participation in the classroom and stimulate their learning experience. Furthermore, it assists in the development of the lecturers as they are encouraged to use more technologically advanced presentation software (paragraph 3.2.1.5, page 78). Lastly, it also lends a professional feel to the audit simulation.						

Table 6-1: How the newly developed audit simulation assisted audit lecturers (continued)

Factors to be included (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Result in a teaching methodology that will meet the audit students' needs, enhance their understanding of the audit subject content and develop important skills such as critical thinking, problem solving and other soft skills.	The audit simulation encompasses a passive, active and blended teaching methodology to address the various learning approaches of students.					
	A passive teaching methodology was applied in the following:					
	Presenting the simulation to the students (see annexure H & I, page 449 to page 484).					√
	An active teaching methodology was applied in the following:					
	The actual simulation developed as a teaching tool represents an active learning environment (see annexure M, page 488).	√	√	√	√	√
	Various forms of visual aids were utilised at the presentation of the lecture (Prezi, flyers and banners) and throughout the simulation by incorporating actual documents (e.g. invoices) and several videos created in Go Animate which stimulated learning and replicated actual audit practices (see annexure F to M, page 447 to page 488).	√		√		√
	Because it was based on a fictitious client, the simulation contained a case study element.	√				
	Cooperative learning techniques were applied in the simulation because students were expected to work in groups (audit teams).	√				√

Table 6-1: How the newly developed audit simulation assisted audit lecturers (continued)

Factors to be included (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Result in a teaching methodology that will meet the audit students' needs, enhance student understanding of the audit subject content and develop important skills such as critical thinking, problem solving and other soft skills (continued).	A blended teaching methodology was applied in the following:					
	Students were provided with an online learning opportunity by means of Facebook. They could post questions on the content on the Facebook page, where the lecturer, who acted as a facilitator, posted his answers. This ensured that knowledge of the subject content was transferred from the lecturer to the student by means of an online teaching methodology. Furthermore, all students were able to view the questions and answers and be a part of the learning opportunity in this way (see annexure J, page 485).					√
	Pre-recorded videos were included in the simulation, for example, how to perform the required audit procedures with regard to the inventory count. In doing so, students learned how to perform this procedure by means of a recording and they were able to visualise the actual environment of audit practice (see annexure M, page 488).			√		

Table 6-1: How the newly developed audit simulation assisted audit lecturers (continued)

Factors to be included (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Contribution to bringing change to audit education: By incorporating all these teaching methodologies into the simulation design, an attempt was made to establish an effective teaching methodology in the audit subject. In this way, student understanding of the audit subject content can be enhanced and important skills be developed such as critical thinking, problem solving and other soft skills required to enter professional practice. Furthermore, issues such as time constraints and lecturer characteristics were also addressed. The simulation was developed so as to be easy to implement at any university or other higher education institutions or training office, not just in South Africa, but globally. Audit lecturers will, therefore, be able to use the simulation as an effective teaching methodology in the audit subject. The audit simulation will also cater for different learning approaches and teaching methodologies (teaching methodology summary, paragraph 3.2.2.4, page 93).						

Table 6-1: How the newly developed audit simulation assisted audit lecturers (continued)

Factors to be included (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Enable the lecturer to assess the knowledge level of students on a continuous basis and not just in a summative evaluation.	Summative and formative assessment and feedback approaches were applied throughout the simulation.					
	Formative assessment and feedback were applied in the following manner:					
	Students were required to submit the simulation for review after a period of six weeks. The lecturer reviewed the audit file submitted, documented feedback and returned the files to students for them to learn from the feedback and correct errors made in applying the audit subject content principles (see annexure E, page 433).					√
	Students then had the opportunity to assess their level of understanding the subject content, to ask for assistance if they were struggling to master the requirements, and to apply what they had learned from the feedback and improve their knowledge of completing the audit file for the final submission (see annexure E, page 433).					√

Table 6-1: How the newly developed audit simulation assisted audit lecturers (continued)

Factors to be included (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Enable the lecturer to assess the knowledge level of students on a continuous basis and not just in a summative evaluation (continued).	Summative assessment and feedback were applied in the following manner:					
	After correcting errors in the audit file according to the feedback from the formative assessment, the final audit file was submitted and graded. A group mark was awarded based on a set assessment rubric to determine the level of understanding of the subject content and other content requirements (see annexure E, page 433).	√				√
	A team summative (team members' assessment) was also included in the assessment process to give students the opportunity to assess one another's performance during the simulation (see annexure M, page 488).	√	√			
	Students then received feedback on their performance in written format as well as a final grade for the project which was calculated taking into account the group mark and the team members' assessment.	√	√			√

Table 6-1: How the newly developed audit simulation assisted audit lecturers (continued)

Factors to be included (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Contribution to bringing change to audit education: By incorporating a formative assessment and feedback approach into the simulation, audit lecturers were able to guide students to improve their subject content knowledge and other requirements. This helped the students to identify problem areas in their learning and gave them the opportunity to correct errors. It further served as a medium for the lecturer to obtain understanding of students' knowledge on a specific topic as well as feedback with regard to the effectiveness of the simulation. Finally, this form of assessment added variety to the learning experiences of students. The summative assessments gave the lecturer and the students the opportunity to evaluate the latter's understanding of the audit subject content and other requirements after completion of the simulation. This served as a measure to determine whether students had mastered the ability to apply theoretical knowledge in an actual situation (paragraph 3.2.3, page 97).						

Table 6-1: How the newly developed audit simulation assisted audit lecturers (continued)

Factors to be included (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Set the audit classroom as a milieu that replicates audit practice by applying experiential learning techniques such as simulations.	Numerous experiential learning factors were incorporated into the simulation and utilised in the audit classroom to imitate audit practice (see annexure M, page 488):					
	• Students were given the opportunity to experience an actual audit on a fictitious client.	√	√	√	√	√
	• Students experienced the whole audit process.	√	√	√	√	√
	• Students were required to perform the audit by keeping to the audit budget.	√			√	
	• Students were required to keep timesheets.	√	√			
	• Students were required to complete actual audit working papers to a standard required for practice.	√			√	
	• Students were required to review working papers of their peers, write review notes, and subsequently address the review notes.	√			√	
	• Students' performance was assessed during the audit simulation, and feedback was given so as to improve performance for the remainder of the audit.	√				√
	• Students' performance was assessed after the audit had been completed, as is done in practice.	√	√			√

Table 6-1: How the newly developed audit simulation assisted audit lecturers (continued)

Factors to be included (paragraph 6.4.2.1, page 186)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Set the audit classroom as a milieu that replicates audit practice by applying experiential learning techniques such as simulations (continued).	• Audit deadlines for completion of audit work were stipulated and had to be adhered to.	√				√
	• Actual client documents and other audit evidence such as invoices, bank statements and contracts were inspected.	√		√		
	• Students held a kick-off meeting and an audit file was submitted in the required format.	√	√			
	• Students had to make use of cross referencing and tick legends.	√			√	
	• Students experienced the time and other pressures of performing an actual audit.	√				√
	• Students were exposed to communication with clients and other stakeholders.	√		√	√	
Contribution to bringing change to audit education: The experiential learning factors in the audit simulation aided students in learning the theory by applying it in practice. It proved to be an effective approach for improving lecturer effectiveness in the subject of auditing which will help the audit classroom to evolve into being a rich teaching-learning environment for both the lecturer and the student. Students will have a more positive attitude, attend class, increase their ability to recall knowledge and solve problems, obtain soft-skill practice and, ultimately, experience auditing as it is performed in practice. The lecturer was also provided with opportunities for integration and application learning because students were actively engaged in the learning process which, in the end, enhances learning effectiveness (paragraph 3.3.2, page 105).						

Table 6-1 discussed the essential factors and how they were included in the newly developed audit simulation to assist the audit lecturer in bringing change to audit education. In the next section, the focus shifts to the audit student.

6.5.2 Assisting the audit student

The newly developed audit simulation will assist the audit student by addressing the various factors that affect the audit student, as indicated earlier (paragraph 6.4.2.2, page 187). Table 6-2 illustrates how these factors were incorporated into the development of the audit simulation and into which build(s) of the simulation the factors were integrated and addressed. The required factors are listed in the first column and the way in which they were incorporated into the audit simulation is explained next to each factor. The contribution of each factor to bringing change to audit education, as noted throughout chapter 4 (page 110), is stated below the relevant factor. The build(s) into which the factors were incorporated and addressed are indicated horizontally with a “√”.

Table 6-2: How the newly developed audit simulation assisted the audit student

Factors to be included (paragraph 6.4.2.2, page 187)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in establishing a positive perception of the variables in the teaching-learning environment which would result in a greater probability that students will apply a deep learning approach.	A variety of methods were applied to foster a positive perception of the variables in the audit teaching-learning environment:					
	Formative assessment and feedback approaches were incorporated into the simulation design (see table 6-1, paragraph 6.5.1, page 192).					√
	Various active teaching methodologies were incorporated into the simulation design, such as the simulation itself, cooperative learning strategies and visual aids (see table 6-1, paragraph 6.5.1, page 192).	√	√	√	√	√
	Effective lecturer characteristics were included as part of the simulation design, such as being supportive, helpful, friendly and approachable to students, good communication skills, student motivation, CPD and well-prepared presentations (see table 6-1, paragraph 6.5.1, page 192).					√
Contribution to bringing change to audit education: It is evident that (i) the use of more formative assessment and feedback approaches; (ii) the use of more active teaching methodologies such as case studies and simulations; and (iii) the presence of effective lecturer characteristics would stimulate students to adopt a deep approach to learning against the current norm of surface approaches in accounting and audit education (paragraph 4.2.1.2, page 117).						

Table 6-2: How the newly developed audit simulation assisted the audit student (continued)

Factors to be included (paragraph 6.4.2.2, page 187)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Contribute to achieving high-quality learning outcomes such as critical thinking.	A variety of methods were applied to help students achieve high-quality learning outcomes:					
	Methods were applied to establish a positive perception of the variables in the teaching-learning environment. This would result in a greater probability that students will apply a deep learning approach, and, finally, achieve higher-quality learning outcomes. For example, the audit simulation was designed to simulate the real audit environment with its problems and transactions which demand a high level of critical thinking (see table 6-1, paragraph 6.5.1, page 192).	√	√	√	√	√
	The simulation and the method of assessment were designed in such a manner that students would develop both quantitative (lower quality) and qualitative (higher quality) learning outcomes. Students would learn the subject content requirements (lower-quality learning outcomes) and be able to apply this knowledge successfully in an actual audit (higher-quality learning outcomes) after completion of the audit simulation.	√	√			√
Contribution to bringing change to audit education: The achievement of both lower- and higher-quality learning outcomes would result in a higher level of understanding of the audit, which is required from prospective professional accountants. Students will also be able to successfully apply themselves in audit practice after graduation (paragraph 4.2.1.3, page 121).						

Table 6-2: How the newly developed audit simulation assisted the audit student (continued)

Factors to be included (paragraph 6.4.2.2, page 187)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Eliminate the negative impact of endogenous and exogenous factors on student achievement.	A variety of methods were applied to mitigate the impact of endogenous and exogenous factors on student achievement.					
	Endogenous factors were mitigated by means of the following:					
	The audit teams were selected to include students from both genders, approximately the same age and various mother tongues, races, ethnicities and cultural backgrounds. In doing so, all the students had an equal opportunity to learn from one another, compensate for one another's weaknesses and draw upon one another's strengths.					√
	The primary and secondary education received by these students was mitigated to a large extent because they were first exposed to the audit subject when they entered tertiary education. Furthermore, no prior exposure to the audit subject is necessary to successfully complete the audit simulation, but it could assist students in mastering the set learning outcomes.					√

Table 6-2: How the newly developed audit simulation assisted the audit student (continued)

Factors to be included (paragraph 6.4.2.2, page 187)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Eliminate the negative impact of endogenous and exogenous factors on student achievement (continued).	Each audit team consisted of either full-time or part-time students so as to ensure that the effect of a difference in enrolment status did not hinder students from learning while completing the audit simulation. Negative factors that were mitigated in this manner included factors such as work responsibilities and other priorities that part-time students usually have to deal with while studying. This factor was also addressed by allowing students to work at their own pace and structure their own work plan so that they could perform the simulation at a time and place most suitable to them.					√
	As this simulation took place outside of class time, audit students were not disadvantaged if they did not attend the audit lectures.					√
	The simulation was structured in such a manner that it would increase students' self-expectations, self-belief, self-confidence and the perception that performing the simulation will develop their minds, intellectual abilities and their performance.					√

Table 6-2: How the newly developed audit simulation assisted the audit student (continued)

Factors to be included (paragraph 6.4.2.2, page 187)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Eliminate the negative impact of endogenous and exogenous factors on student achievement (continued).	Exogenous factors were mitigated by means of the following:					
	The audit simulation in itself represented an active teaching methodology, but a passive and blended methodology were also incorporated to ensure that students were exposed to a variety of teaching methodologies (see table 6-1, paragraph 6.5.1, page 192).	√	√	√	√	√
	The lecturer, who acted as a facilitator to the simulation, displayed personality traits that made him approachable for the participating students (see table 6-1, paragraph 6.5.1, page 192).					√
	Other factors such as insufficient communication and a lack of motivation were addressed so as to ensure that students were able to communicate with the lecturer and were motivated to perform the simulation and learn from the experience (see table 6-1, paragraph 6.5.1, page 192).	√		√		√
	The usefulness of the simulation was ensured because it was based on the relevant subject content and other skill requirements (see table 6-3, paragraph 6.5.3, page 214).	√		√	√	

Table 6-2: How the newly developed audit simulation assisted the audit student (continued)

Factors to be included (paragraph 6.4.2.2, page 187)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Eliminate the negative impact of endogenous and exogenous factors on student achievement (continued).	- The participant guide was structured according to the sections in the audit process and provided several action icons which aided the students to successfully perform the audit simulation. This was done in order to address any uncertainty with regard to what was expected of them. These action icons included: - Client and introductory information required for the specific section; - Audit requirements and methodology; - Required task(s); - Purpose of task(s); - Working paper template to be completed; - Task allocation between team members; and - Required time to complete the tasks for the specific section.	√				
Contribution to bringing change to audit education: Although the audit lecturer cannot always control the endogenous factors which audit students are exposed to, these factors were considered in developing the simulation to limit their impact as learning obstacles during the simulation (paragraph 4.2.2.1, page 125). Those exogenous factors that audit lecturers can control to a great extent were also addressed in the simulation design to ensure that these factors did not have a negative influence on students' learning experience in the audit simulation (paragraph 4.2.2.3, page 133).						

Table 6-2 explained the factors required to assist the audit student in learning from the audit simulation and, in turn, bring change to the current approach to teaching audit. The next section of this chapter illustrates how the content and other skill requirements (generic and pervasive skills) of the audit subject were incorporated into the simulation design.

6.5.3 Assisting in incorporating the subject content and competency requirements

The newly developed audit simulation will assist students in mastering various content and competency requirements according to the SAICA competency framework (paragraph 6.4.2.3, page 188). These include:

- The subject content requirements with regard to auditing and assurance (table 5-2, paragraph 5.3, page 142);
- The competency requirements with regard to auditing and assurance (table 5-1, paragraph 5.3, page 142); and
- The generic and pervasive skill competencies that students need to possess to be deemed competent when entering professional practice such as:
 - Ethics and professionalism (table 5-3, paragraph 5.4.1, page 159);
 - Personal attributes (table 5-4, paragraph 5.4.2, page 164); and
 - Professional skills (table 5-5, paragraph 5.4.3, page 168).

Table 6-3, starting on the next page, illustrates how these content and other competency requirements in the SAICA competency framework were incorporated into the audit simulation. The content requirements are listed in the first column, and the way in which the requirements were incorporated into the audit simulation is discussed next to each requirement. The contribution to bringing change to audit education, as noted throughout chapter 5 (page 138), by including these requirements into the simulation, is also stated. The build(s) in which the required subject content, competencies and other skill requirements were incorporated are indicated horizontally with a “√”.

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Incorporate all the subject technical content requirements.	The following content requirements were included in the audit simulation as students' progressed through the audit process:					
	• Framework for assurance engagements.	√			√	
	• Auditing Profession Act 26 of 2005.	√			√	
	• Companies Act 71 of 2008.	√			√	
	• Structure of pronouncements issued by the IAASB.	√			√	
	• The authority of auditing and assurance standards and practice statements issued nationally and internationally.	√			√	
	• KING III Report.	√			√	
	• SAICA CPC and By-Laws.	√			√	
	• IRBA CPC and Disciplinary Rules.	√			√	
	• Quality controls for firms that perform audits and reviews of financial statements, and other assurance and related service engagements. (ISQC 1/SAAPS 1)	√			√	
	• Issues relating to audit reports and financial information presented in electronic format.	√		√	√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Incorporate all the subject technical content requirements (continued).	• Acceptance and continuance of audit engagements. (ISA 210)	√			√	
	• Quality control for an audit of financial statements. (ISA 220)	√			√	
	• Audit documentation. (ISA 230)	√			√	
	• Responsibilities relating to fraud in an audit of financial statements. (ISA 240)	√			√	
	• Consideration of laws and regulations in an audit of financial statements. (ISA 250)	√			√	
	• Communication with those charged with governance. (ISA 260)	√			√	
	• Communicating deficiencies in internal control to those charged with governance and management. (ISA 265)	√			√	
	• The audit process.	√			√	
	• Financial statement assertions.	√			√	
	• Planning an audit of financial statements. (ISA 300)	√			√	
	• Identifying and assessing the risks of material misstatement through understanding the entity and its environment. (ISA 315)	√			√	
	• Materiality in planning and performing an audit. (ISA 320)	√			√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Incorporate all the subject technical content requirements (continued).	• The auditor's procedures in response to assessed risks of material misstatement. (ISA 330)	√			√	
	• Planning in a computerised information systems environment.	√			√	
	• Fundamental principles of audit evidence. (ISA 500)	√			√	
	• Audit testing procedures to gather audit evidence.	√			√	
	• Nature, timing and extent of: - Tests of controls; - Substantive analytical procedures; and - Substantive tests of detail.	√			√	
	• CAATs	√			√	
	• Enquiries regarding litigation and claims. (SAAPS 4)	√			√	
	• Specific considerations for selected items. (ISA 501)	√			√	
	• External confirmations. (ISA 505)	√			√	
	• Initial audit engagements – opening balances. (ISA 510)	√			√	
	• Analytical procedures. (ISA 520)	√			√	
	• Audit sampling. (ISA 530)	√			√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Incorporate all the subject technical content requirements (continued).	• Audit of accounting estimates, including fair value accounting estimates, and related disclosures. (ISA 540)	√			√	
	• Related parties. (ISA 550)	√			√	
	• Subsequent events. (ISA 560)	√			√	
	• Going concern. (ISA 570)	√			√	
	• Written representations. (ISA 580)	√			√	
	• Consideration of the sufficiency and appropriateness of audit evidence.	√			√	
	• Evaluation of misstatements identified during the audit. (ISA 450)	√			√	
	• Consideration of the fair presentation of the financial statements.	√			√	
	• Forming an opinion and reporting on financial statements. (ISA 700)	√			√	
	• Modifications to the opinion in the independent auditor's report. (ISA 705)	√			√	
	• Emphasis of matter paragraphs and other matter paragraphs in the independent auditor's report. (ISA 706)	√			√	
	• Comparative information. (ISA 710)	√			√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Incorporate all the subject technical content requirements (continued).	Although the following content requirements were not specifically included in the simulation, students still needed to understand them because they have an impact on the direction and scope followed in the audit simulation at various stages in the audit process. Students therefore still considered these content requirements.					
	• Engagements to review financial statements. (ISRE 2400)					
	• Assurance engagements other than audits or reviews of historical financial statements. (ISAE 3400)					
	• Engagements to perform agreed-upon procedures regarding financial information. (ISRS 4400)					
	• Engagements to compile financial information. (ISRS 4410)					
	• The auditor's responsibility relating to other information in documents containing audited financial statements. (ISA 720)					
	• The special considerations in the audit of small entities. (IAPS 1005)					
	• Auditing derivative financial instruments. (IAPS 1012)					
	• Audits of group financial statements (including the work of component auditors). (ISA 600)					
	• Using the work of internal auditors. (ISA 610)					
	• Using the work of an auditor's expert. (ISA 620)					
	• Consideration of circumstances of possible trading while factually insolvent. (SAICA guide)					

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Incorporate all the subject technical content requirements (continued).	• Reporting by auditors on compliance with IFRS. (IAPS 1014)					
	• Audits of financial statements prepared in accordance with special purpose frameworks. (ISA 800)					
	• Audits of single financial statements and specific elements, accounts or items of a financial statement. (ISA 805)					
	• Engagements to report on summary financial statements. (ISA 810)					
	• The consideration of environmental matters in the audit of financial statements. (IAPS 1010)					
	• Client's use of service organisations. (ISA 402)					
	• Electronic commerce – effect on the audit of financial statements. (IAPS 1013)					
Contribution to bringing change to audit education: This audit simulation will assist in transforming the approach to audit education and delivering audit graduates who have the technical knowledge upon entering practice. This is done by means of incorporating these content requirements and by ensuring that the other content requirements students still need an understanding of, as to understand the direction and scope followed in the audit simulation, at various stages in the audit process (paragraph 5.3, page 142).						

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the competencies required in the auditing and assurance specialism.	The competencies required to be deemed competent in auditing and assurance were incorporated into the simulation design as follows:					
	- Students had to analyse, evaluate and provide advice on assurance needs as they were required to: - Understand the various types of assurance services available, e.g. statutory audit versus review engagement; - Recommend assurance services appropriate to meeting the entity's needs, e.g. statutory audit versus review engagement; and - Identify the nature, scope, standards and legislation applicable to a particular engagement, e.g. Companies Act requirements.	√		√	√	
	- Students had to identify and consider issues related to accepting an engagement, e.g. performing a client acceptance assessment, as they were required to: - Gather and examine information pertaining to a potential client to assess possible significant threats to ethical requirements that resulted from undertaking the engagement; and - Apply the understanding they had gained to evaluate the overall risk in accepting the engagement.	√		√	√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the competencies required in the auditing and assurance specialism (continued).	- Students had to establish the terms of the engagement as they were required to: - Draft an appropriate engagement letter for a new engagement; - Recognise circumstances when a new engagement letter needed to be issued for existing engagements, e.g. determine whether an engagement letter needed to be issued; and - Follow the procedures required by legislation or professional pronouncements to accept an appointment, e.g. ISQC 1.	√		√	√	
	- Students had to identify and assess the key risks, e.g. the risks of material misstatement at both the overall and assertion level, for the performance of the engagement as they were required to: - Obtain an understanding of the entity and its environment, including internal controls, by investigating the entity and its environment; - Identify, based on the understanding, the specific risks that could result in material misstatement, including fraud risk factors; and - Assess the risk of material misstatement at the overall financial statement level and at the assertion levels.	√		√	√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the competencies required in the auditing and assurance specialism (continued).	- Students had to determine which rules, standards or policies to apply to the subject matter being evaluated and then assess the suitability of criteria such as: - For general-purpose financial statements, such criteria would IFRS; and - For other engagements identify what set of rules or policies best apply to the material being evaluated, e.g. financial statements.	√		√	√	
	- Students had to develop materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement, as they were required to: - Develop an understanding of the decision-making needs of the users of the information, e.g. manufacturing or investments; - Identify the factors that affect materiality, e.g. the assessment of the overall risk of material misstatement; and - Determine the planning and final materiality level.	√		√	√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the competencies required in the auditing and assurance specialism (continued).	- Students had to design effective and efficient procedures based on the engagement's scope and the assessed risks and, for a given set of circumstances, decide on: - The form, extent and quality of evidence required to support the assurance report, e.g. electronic or original documents; - The most efficient testing procedures to obtain the evidence, e.g. tests of control and or substantive tests of detail or analytical procedures; - The need to make use of others, e.g. experts, internal auditors, other auditors or the need to use CAATs to gather evidence, e.g. Microsoft Excel; - Ways to communicate the plan to appropriate key stakeholders (including those charged with governance), e.g. meeting with the client; and - The design of the appropriate programs of engagement procedures, e.g. audit programs, based on the above considerations.	√		√	√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the competencies required in the auditing and assurance specialism (continued).	- Students had to execute the work plan as they were required to: - Perform the procedures specified in the audit program, e.g. analytical review of payroll expenses; - Apply an appropriate level of professional scepticism, remaining alert to the possibility of fraud, e.g. corroborating management responses; and - Modify the work plan as necessary, e.g. obtaining more evidence.	√		√	√	
	- Students had to document the results of procedures performed as they were required to: - Ensure that the documentation provided a clear link to significant findings or issues that arose during the engagement, e.g. cross referencing and conclusions, and that the documentation contained sufficient information to support the nature, timing and extent of the further audit procedures performed and the results of the procedures, e.g. complete working papers; and - Draw a conclusion on whether the procedure met its objectives and evaluate the overall adequacy of documentation, e.g. concluding on working papers.	√		√	√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the competencies required in the auditing and assurance specialism (continued).	- Students had to evaluate the evidence and draw conclusions as they were required to: - Evaluate the sufficiency and significance of the evidence and or results of analysis; identify and evaluate inconsistencies, unexpected circumstances or findings, or findings that indicated possible fraud, error or illegal acts; and assess the impact on the report, e.g. evaluating any accounting errors found; - Analyse and decide on the reasonableness of the conclusions on the subject matter, based on an understanding of the nature of the business and its operations for the period and on the outcome of assurance procedures, e.g. audit evidence obtained confirmed expectations; - Determine whether the subject matter conformed to the rules, standards or policies used for evaluation and evaluate the reasonableness or fair presentation of the subject matter as a whole, e.g. whether financial statements comply with IFRS; and - Analyse the impact of unresolved disagreements or scope limitations in the context of materiality, e.g. limited audit evidence.	√		√	√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the competencies required in the auditing and assurance specialism (continued).	- Students had to evaluate the evidence and draw conclusions as they were required to (continued): - Assess the need to make corrections to the subject matter, e.g. adjusting financial statements.	√		√	√	
	- Students had to draft the report upon completion of the engagement as they were required to: - Develop an appropriate report in accordance with the terms of the engagement and the applicable statutory, regulatory or professional requirements, e.g. audit report; - Identify and consider the impact of subsequent events on the report, e.g. determine whether any subsequent events took place after the reporting date, but before the audit report was issued; and - Consider the impact on the report of other information in documents containing assurance reports, e.g. director's report in the financial statements.	√		√	√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the competencies required in the auditing and assurance specialism (continued).	- Students had to prepare information for meetings with stakeholders as they were required to: - Prepare information for timely discussion with management, those charged with governance and other stakeholders in presentation or report format, e.g. management letter.	√		√	√	
	- Students had to identify and evaluate the risks pertaining to the financial information system as they were required to: - Identify and understand the major classes of transactions and balances, e.g. accounting cycles; - Identify and understand the nature of the financial information system (e.g. stand-alone or networked environment; off-the-shelf or customised software), e.g. Pastel Accounting Software; and - Identify and evaluate the information risks, e.g. risks of corrupting financial data, based on their understanding of the above.	√		√	√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the competencies required in the auditing and assurance specialism (continued).	- Students had to identify and document the key internal controls (including IT-related controls) implemented in an entity as they were required to identify and document the internal control system (including IT-related controls) and address the following areas: - The control environment and the entity's risk assessment process; and - The information system, including the related business processes, relevant financial reporting, communications, control activities both manual and automated, including systems development and change controls, access controls, continuity of operations, disaster recovery and application controls, e.g. password use.	√		√	√	
	- Students had to evaluate internal control as they were required to: - Select suitable criteria or a recognised framework for control evaluation, e.g. control sample selection method; - Identify the adequacy of compensating controls, e.g. if controls were found not be designed and implemented effectively; and - Understand the implications of deficiencies identified and recommend improvements, e.g. change in the audit approach.	√		√	√	

Table 6-3: How the newly developed audit simulation incorporates the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the competencies required in the auditing and assurance specialism (continued).	- Students had to be exposed to the design, implementation and management of the quality control system in the firm as they were required to: - Understand the importance of quality control in the performance of engagements; - Design, implement and manage an effective quality control system that addressed areas such as leadership responsibilities for quality, ethical requirements, acceptance and continuance of client relationships and specific engagements, human resources, engagement performance and monitoring, e.g. review of working papers; and - Ensure that the quality control system was effective, e.g. that all the required review procedures took place.	√		√	√	√

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the competencies required in the auditing and assurance specialism (continued).	The following competencies were not specifically incorporated into the audit simulation due to their nature, the characteristics of the fictitious client and the expectations which were required to obtain them.					
	• Evaluate IT-related elements of internal control (table 5-1, competency 3.4, paragraph 5.3).					
	• Respond to the findings of the practice review undertaken by the IRBA and the findings of internal reviews (portion of competency 4, table 5-1, paragraph 5.3).					
	• Identify and respond to reportable irregularities (table 5-1, competency 5, paragraph 5.3).					
Contribution to bringing change to audit education: Incorporating the content requirements; auditing and assurance competencies, and providing students with the opportunity to develop the abilities to be deemed competent in the field of auditing and assurance, will assist in transforming the approach to audit education and deliver audit graduates who are deemed competent upon entering practice (paragraph 5.3, page 142).						

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice.	The generic and pervasive skills with regard to ethics and professionalism were incorporated into the simulation design. Students were reminded that the simulation content was copyrighted and that each team should do their own simulation and not copy work from other teams. They were also reminded to report any breaches to the facilitator. In doing so, the following competencies were developed:					
	- Students will enhance their skills to protect the public interest as they were required to: - Adhere to the related standards in all the tasks performed, e.g. the SAICA CPC; and - Understand the profession's standards of competence and integrity and how these standards serve the public and protect the public interest, e.g. understand why confidential information should not be distributed.					√
	- Students will enhance their skills to avoid conflict of interest as they were required to: - Understand the reasons for avoiding conflict-of-interest situations and become familiar with the guidelines and laws that have been developed to prevent their occurrence, e.g. by adhering to the SAICA CPC while performing the simulation.					√

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice (continued).	- Students will enhance their skills to act competently with honesty and integrity as they were required to: - Understand and adhere to the profession's standards of competence and integrity; - Ensure that any unethical behaviour and breaches of the conduct required when performing the simulation were reported to the facilitator so that such information could be communicated to the appropriate authorities; - Act honestly; - Make transparent decisions, recognise and accept responsibility for actions and for the consequences of those decisions, e.g. take responsibility for the tasks required from you; and - Use all appropriate internal and or external resources, such as the facilitator, in resolving ethical dilemmas.					√

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice (continued).	- Students will enhance their skills to carry out work with a desire to exercise due care as they were required to: - Ensure that, when carrying out work, the interests of other students were placed before own self-interest, e.g. by always cooperating with other team members; - Preserve the trust inherent in fiduciary relationships with the other team members, e.g. not breaking the trust among team members; - Prepare information in such a way that the pertinent facts were presented fairly, e.g. prepare working papers accurately and truthfully; - Interpret information objectively by exercising professional scepticism when required, e.g. not just accepting everything at face value, and corroborating explanations by management; and - Make appropriate ethical judgements based on an understanding of the level of care expected of professional accountants in various situations, e.g. determining the effect on any potential ethical issue that arose during the audit simulation.			√	√	√

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice (continued).	- Students will enhance their skills to protect the confidentiality of information as they were required to: - Not divulge or exploit confidential information, e.g. not distributing the copyrighted simulation and supporting substance; and - Protect against the accidental distribution of confidential information, e.g. taking care to only print permitted information.	√	√	√	√	√
	- Students will enhance their skills to adhere to the rules of professional conduct as they were required to: - Abide by the CPCs of SAICA and the IRBA; and - Refrain from improper conduct while performing the simulation.					√

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice (continued).	- Students will enhance their skills to maintain objectivity and independence as they were required to: - Understand the principles and rules of objectivity and independence and act appropriately, e.g. in accordance to the rules of the SAICA CPC; - Identify and evaluate threats to objectivity in a proposed activity or decision, and implement suitable safeguards to obviate or reduce the threats to an acceptably low level, e.g. client acceptance assessment; and - Identify and evaluate threats to independence (both in fact and appearance) and implement safeguards to obviate or reduce the threats to an acceptably low level, e.g. client acceptance assessment.	√		√	√	√
	- Students will enhance their time management skills as they were required to: - Respect deadlines, manage time and organise tasks logically, e.g. submitting the completed audit simulation on time, and completing timesheets.	√	√	√	√	√

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice (continued).	- Students will enhance their skills to maintain and enhance the profession's reputation as they were required to: - Perform work to a high standard of quality, e.g. high-quality working papers; - Understand the role of the profession within the economic and social environment of South Africa and the region, e.g. why the audit is performed; - Understand the structure of the profession, the services which it provides to members, and the requirements for membership, e.g. the competencies they should master before acceptance to the CA profession; - Contribute to the enhancement of the profession's image, e.g. acting in line with requirements while performing the simulation; - Promote the profession, e.g. informing peers about what they are doing; and - Practice professional courtesy, e.g. acting professionally toward one another in the audit team.	√			√	√

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice (continued).	The generic and pervasive skills with regard to personal attributes were incorporated into the simulation design as follows:					
	- Students will enhance self-management skills as they were required to: - Ensure that all assigned work was complete and to assess own performance to see where more development was necessary, e.g. setting a work plan.	√	√			√
	- Students will enhance their leadership and initiative skills as they were required to: - For each assignment, identify milestones that measured whether work was being performed on time and within budget, e.g. ensuring that the required work was done in terms of the set work plan; - Identify opportunities, issues and possible improvements and make suggestions or recommendations to the facilitator, e.g. indicate to the facilitator when time allocation was not sufficient; - Challenge assumptions, e.g. corroborating information; and - Contribute and lead by action and example, e.g. display the personality traits required to act professionally.	√	√	√	√	√

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice (continued).	- Students will enhance their skills to maintain and demonstrate competence and recognise limits as they were required to: - Perform quality work with diligence and due care, based on the most recent standards or practices, e.g. simulation was based on most recent standards and practices; - Rely on the work of others only after establishing a reasonable basis for reliance, such as sufficient evidence of their competence, their knowledge of current standards, and evidence of due care, e.g. reviewing of working papers prepared by other team members; and - Recognise the limits of their competence and voluntarily defer to others when more experience or greater expertise was necessary to complete the task successfully and, if applicable, arrange for adequate supervision, e.g. asking if unsure.	√		√	√	√
	- Students will enhance their teamwork skills as they were required to: - Collaborate with colleagues and work effectively as a team member, e.g. in the audit teams.	√	√			√

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice (continued).	- Students will enhance their skills to strive to add value in an innovative manner as they were required to: - Seek internal and external information pertaining to the entity that will provide insights and useful ideas consistent with the entity's objectives, e.g. providing recommendations in the management letter; - Identify and explore innovative alternatives before making decisions or limiting alternatives; and - Seek to improve effectiveness and efficiency of assigned tasks, e.g. determining the most effective manner to complete tasks.	√		√	√	√
	- Students will enhance their skills to manage change as they were required to: - Anticipate change if the audit team needed changing; - For anticipated changes, provide a realistic analysis of adjustments and challenges likely to be encountered and suggest steps to deal with them, e.g. considering reallocation of work; and - Assess how own work was likely to be affected, be open to change and help plan change proactively, e.g. reallocating work.	√	√			√

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice (continued).	- Students will enhance their skills to treat others in a professional manner as they were required to: - Treat others respectfully, courteously and equitably; - Show empathy by understanding why others had a particular perspective on an issue; and - Resolve conflict and differences of opinion by focusing on issues, not personalities, e.g. taking into account the opinion of all members of the audit team.					√
	- Students will enhance their skills of being a life-long learner as they were required to: - Demonstrate intellectual ability and the ability to apply themselves at a level which enabled life-long learning in the demanding context in which a CA works; - Continuously assess personal development needs; and - Actively seek appropriate learning opportunities, e.g. being willing to participate in and learn from the simulation.					√

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice (continued).	The generic and pervasive skills with regard to professional skills were incorporated into the simulation design as follows:					
	- Students will enhance their skills to obtain information as they were required to: - Gather or develop information and ideas to develop an understanding of the operating environment, e.g. from the information provided by the client; and - Identify the needs of internal and external clients and develop a plan to meet those needs, e.g. determining the engagement type.	√		√	√	
	- Students will enhance their skills to examine and interpret information and ideas critically as they were required to: - Analyse information or ideas, e.g. analysing audit evidence and perform computations, e.g. performing audit procedures; - Verify and validate and evaluate information and ideas, e.g. corroborating management explanations; and - Integrate ideas and information from various sources to draw conclusions or form opinions, e.g. basing conclusions on various sources of audit evidence.	√		√	√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice (continued).	- Students will enhance their skills to communicate effectively and efficiently as they were required to: - Seek and share information, facts and opinions through written and oral discussion, e.g. working papers, meetings and email; - Prepare documents in written and graphic form, e.g. working papers, audit reports and management letter; and - Present information effectively, e.g. logical outlay of documents.	√	√		√	
	- Students will enhance their skills to manage and supervise as they were required to: - Plan and manage projects, e.g. establishing the work plan and completing the audit simulation; - Identify the need for internal and external expertise, e.g. asking the facilitator for assistance when something was unclear; - Facilitate decision making, e.g. making appropriate decisions based on information obtained; - Lead effective meetings, e.g. holding a kick-off meeting; and - Supervise, e.g. ensuring that all team members completed their required tasks.	√	√	√	√	√

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice (continued).	- Students will enhance their skills to understand the impact that IT has on a CA's daily functions and routines as they were required to use computer applications to expedite the completion of tasks such as: - Calculating information, e.g. spreadsheets; - Retrieving information, e.g. obtaining the audit evidence; - Researching information, e.g. corroborating management responses; and - Protecting information, e.g. not distributing the simulation and supporting substance without permission from the facilitator.	√		√	√	√
	- Students will enhance their skills to consider basic legal concepts as they were required to: - Seek familiarity with the structure of the legal system and legal framework within which the entity operates and assess the impact of relevant regulations on routine and long-term decisions, e.g. the impact of the Companies Act requirements on the client.	√		√	√	

Table 6-3: How the newly developed audit simulation incorporated the subject content and competency requirements (continued)

Factors to be included (paragraph 6.4.2.3, page 188)	Methods of incorporating factors into the simulation development	Simulation design builds				
		PG	SA	CI	WP	G
Aid in developing all the generic and pervasive skills required from audit students after graduation and before entering professional practice (continued).	- Students will enhance their skills to solve problems and make decisions as they were required to: - Identify and diagnose problems and or issues, e.g. non-compliance with IFRS; - Develop solutions, e.g. determine adjusting journal entries; and - Decide or recommend or give advice, e.g. recommending adjustment journal entries to the client.	√		√	√	
	- Students will enhance their skills to understand the national and international environment as they were required to: - Demonstrate an understanding of the economic, social and political backgrounds of different individuals, e.g. working with various different individuals from different backgrounds.					√
Contribution to bringing change to audit education: By incorporating the development of these skills into the audit simulation, students will enhance their abilities, be exposed to the uppermost standards of integrity, and carry out all tasks objectively in accordance with the ethical values that are expected from CAs. Furthermore, the students will develop a number of personal attributes to be able to conduct themselves as professionals in practice, as well as several professional skills which are critical to function effectively in the various specialisms in the field. By doing so, students, when entering the marketplace after graduation, should be able to meet or even exceed the competency requirements that practice currently demands (paragraph 5.4, page 158).						

6.5.4 Summary on the design of the newly developed audit simulation

The previous paragraphs (paragraph 6.5.1, page 192 to paragraph 6.5.3, page 214) discussed the development of the new audit simulation. It was noted that the author established a framework consisting of various builds which eventually formed the audit simulation. It was illustrated also how all the motivations (paragraph 6.4.2, page 186) of the overall audit teaching-learning environment, as identified throughout chapters 3 (page 55) to 5 (page 138), were incorporated into the newly developed simulation design and how the incorporation of these requirements would assist in bringing change to audit education.

6.6 Chapter summary

The introduction to this chapter mentioned numerous factors that need consideration before an attempt can be made to bring change to the audit classroom at universities or other higher education institutions. The remainder of this chapter provided a discussion on the incorporation of these factors into the development of a new audit simulation project, as well as supporting substance that can assist in addressing the various criticisms against the audit pedagogy.

This was done by highlighting some of the current criticisms against audit education found in the literature. It was noted that auditing courses in general are concept oriented and that students often struggle to relate to these ideas due to a lack of a clearly developed and adequate frame of reference to analyse and understand auditing concepts. Furthermore, it was identified that students have a lack of experience with transactions and activities which constitute the subject matter of auditing. This lack of experience introduces a roadblock for students in their journey toward comprehending basic audit concepts and ideas which, in turn, leads to poor academic performance in this subject field.

The reason for this lack of understanding was highlighted by the various criticisms against audit education. It was argued that the teaching approach followed by audit educators is outdated and unable to engage students actively in the learning process. Another point of critique is the method of assessment which measures students' competence by means of a written examination. This method does not assist students in developing the skills or mastering the subject content that are required to be deemed competent in the audit arena. The main criticism against audit education was found to be the fact that students graduate with little to no experience in audit practice.

The discussion shifted focus to how other researchers have attempted to address these issues by means of audit simulations and case studies. The findings from the literature review indicated that simulations do indeed create an opportunity for students with very little practical experience to master the audit subject. It was evident that, although these studies have contributed significantly to audit education literature, a number of gaps still exist in these simulations or case studies. Therefore, an overview of the whole audit process have yet to be established in these simulations or case studies. Based on these findings, a discussion followed on the motivation for developing a new audit simulation which would provide audit students with a holistic view of the audit process and enhance their perceived broad competence.

An explanation was given then of the design of the new audit simulation, the framework that was developed and applied in the simulation, and how the various factors required for change in the audit classroom were incorporated into the simulation. A summary on the simulation design was also provided.

In conclusion, an ancient Chinese proverb states: “Tell me I forget; show me I remember; involve me I understand” (Orff, 2014). If the newly developed audit simulation is proven to be effective, it could intervene in the current approach in audit education and aid in developing students who will understand and apply the technical content and the requirements of the audit subject in examinations and audit practice. This, in turn, could produce students who are sufficiently competent when entering the professional audit environment on completion of their formal studies.

Chapter 7

The research methodology and the research results

“Research is formalized curiosity. It is poking and prying with a purpose.” – Zora Neale Hurston

7.1 Introduction

In the previous chapters, knowledge was obtained on the variables in the audit teaching-learning environment that need consideration before change can be brought to the current teaching approach in audit education at universities or other higher education institutions. The following variables were considered:

- The audit lecturer (chapter 3, page 55);
- The audit student (chapter 4, page 110);
- The subject content of the audit teaching-learning environment (chapter 5, page, 138); and
- The milieu of the audit teaching-learning environment (chapter 3, page 55).

This was followed by a discussion on the development of the audit simulation and supporting substance based on a framework for simulation design established by the author (chapter 6, page 174). This framework was established by taking into account all the variables in the overall audit teaching-learning environment and should be useful for other researchers in their journey of developing other simulations in future (paragraph 6.5, page 188).

Chapter 2 (page 26) discussed the philosophical paradigms and other underpinnings of the qualitative and quantitative research methods that are applicable to accounting education in general. The philosophical paradigm and research methodology applied in this thesis are discussed in this chapter. The latter discussion addresses secondary research objective i (c) as stated in chapter 1 (paragraph 1.5, page 15). The remainder of this chapter addresses another one of the secondary research objectives, which has not been addressed in the previous chapters, namely (paragraph 1.5, page 15):

- Evaluating whether a newly developed audit simulation would assist in enhancing the audit students' perceived broad competence (secondary research objective vii).

In addressing these secondary research objectives, this chapter first elaborates on the philosophical paradigm and research design applied in this study. Then the population and sample selection are discussed. Next, an explanation is given as to how the experiment was conducted, followed by a discussion on how the data were obtained ethically by applying a mixed methodology. The results of the quantitative and qualitative design follow, with a conclusion on the secondary research objectives mentioned above. The chapter concludes with a summary of the discussions.

7.2 Philosophical paradigm and research design

As noted in chapter 2 (paragraph 2.5, page 50), a mixed methodology, consisting of both quantitative and qualitative methods of collecting data, is increasingly being used in the field of accounting education and has been applied successfully in several recent studies by, for example, Donmez *et al.* (2012:418) and McPhail *et al.* (2010:31). It was also indicated that the use of both qualitative and quantitative methods continued elicit discussion due to the diverse epistemological and ontological assumptions and paradigms related to these two methods (Aagaard *et al.*, 2014:106; Kidd *et al.*, 2011:370) (paragraph 2.5, page 50). Furthermore, it was explained that researchers conducting mixed-method research can manage these paradigmatic issues by drawing from the strengths of both methods to mitigate their respective weaknesses (Mengshoel, 2012:373) (paragraph 2.5, page 50).

Based on these findings a *mixed methodology* was selected for this study. Therefore, the research in this thesis was conducted in the *pragmatic paradigm*. This paradigm allows for, first, some amount of generalisation, usually associated with the positivist paradigm (paragraph 2.5, page 50) by applying a process of deductive reasoning (paragraph 2.2.1, page 29). Secondly, context consideration (paragraph 2.5, page 50) is possible, which typically relates to the interpretivist paradigm, by applying a process of inductive reasoning (paragraph 2.2.2, page 31). Thus, a mixed methodology was followed by applying the two methods consecutively. This allowed the results of the one method to *inform* the other, which McKerchar (2008:20) (paragraph 2.5, page 51) suggested as a way to increase the validity and reliability of the research results.

First, a *quantitative* study was conducted to evaluate the audit simulation. This study applied an *experimental research design*, which is usually associated with the positivist paradigm (paragraph 2.2.1, page 29). The instrument used in this study was a *group-administered questionnaire*, because this type of questionnaire is deemed to be the most effective

questionnaire when the researcher has adequate opportunities to administer it to the respondents (paragraph 2.3.1, page 37), as was the case in this study.

Creswell (2005:52) defined experimental research as research that determines whether an intervention influences an outcome for one group as opposed to another. Experimental research, therefore, encompasses an experimental group receiving the intervention and a control group receiving no intervention. An experimental research design is also regarded as the most accurate form of experimental research, because it proves or disproves a hypothesis mathematically, with statistical analysis (Shuttleworth, 2008) by applying a properly designed experiment and/or questionnaire (Fouché, 2006:149).

The classic *quasi-experimental (pre-test/post-test) design* was followed in the study in order to determine whether the intervention (newly developed audit simulation) would enhance the perceived broad competence of audit students and, consequently, prove or disprove the hypothesis stated in chapter 1 (paragraph 1.4, page 15) with a quantitative research design. The quasi-experimental design was selected based on the fact that it will contribute to the reliability and validity of the experimental design (Fouché, 2006:149). Furthermore, it was noted from consultation with the Statistical Consultation Services of the North-West University (Potchefstroom Campus) that this form of experimental design would constitute a reliable and valid methodology to determine whether the newly developed audit simulation would assist in enhancing the audit students' perceived broad competence by means of quantitatively proven findings. Table 7-1 illustrates the experimental design followed in this study.

Table 7-1: Quasi-experimental design

Type of group	Group no.	Pre-test	Experiment	Post-test
Experimental	University X	Perform pre-test	Undergo experiment	Perform post-test
Control	University Y	Perform pre-test		Perform post-test

Secondly, a *qualitative* approach was followed, based on the *phenomenological theoretical framework* (paragraph 2.4.2, page 41) which is usually associated with an interpretivist approach (paragraph 2.2.1, page 29). Various focus group discussions were held with the students after completing the quantitative data gathering process so as to achieve a *triangulation* of results. In this way, the validity and reliability of the research findings were improved (paragraph 2.5, page 51). Triangulation, as discussed previously (paragraph 2.5, page 51), is the use of mixed methods (qualitative and quantitative) in order to validate

results so that they are varied from one another with respect to their inherent strengths, limitations and/or biases (Aagaard *et al.*, 2014:17). It was, therefore, decided to use focus group discussions to inform some of the findings of the quantitative study so as to enhance the validity and reliability of the quantitative findings. A second reason for using these discussions was to obtain a better understanding of whether a newly developed audit simulation would enhance the perceived broad competence of audit students.

Next, a discussion on the population and sample selection for both the quantitative and qualitative studies, as well as a description of how the experiment was conducted, is provided.

7.3 Population and sample selection

The target population for the quantitative part of the study consisted of third-year audit students in the CA programme at two SAICA-accredited South African universities. The experimental group consisted of third-year audit students at University X and the control group consisted of the third-year audit students at University Y. University Y was selected as the control group for the experiment after considering the mediating variables such as age, race, gender and level of education of the respondents. This was done to ensure that the results of the experiment were reliable and that minimal differences, if any, were present in the variables affecting the respondents.

The author attempted to ensure that the mediating variables did not affect the reliability and validity of the data obtained, which is an important consideration in quantitative research as noted by Chung *et al.* (2013:455) and McKerchar (2008:11) in chapter 2 (paragraph 2.3, page 33). Later in this chapter (paragraph 7.6.5, page 297), a discussion follows on the effect, if any, of these mediating variables, which could cause differences between the experimental and control group, and on how these differences were accounted for in further ensuring the validity and reliability of the data.

The author was confident that University Y was an acceptable control after taking into account the following observations and findings:

- The curriculum content for the audit subject at both universities were governed by SAICA, as noted in chapter 5 (paragraph 5.2, page 140);
- The audit curriculum programme proved to be structured in the same manner for both universities; therefore, these students had covered the same audit subject content requirements up until the time the study was performed;

- Discussions with the lecturers responsible for the audit subject for the third-year audit students at both universities confirmed that their teaching methodologies and assessment and feedback approaches were similar in the majority of cases; and
- The textbooks and auditing standards used by the students of University Y were found to be the same as those used at University X.

Furthermore, no other control group (SAICA-accredited university) was found to resemble the sample size and demographical variables such as age, race and gender and cultural background of University Y. The author was confident that the sample population used in the experiment would provide reliable results seeing that the group-administered questionnaires were distributed to sample populations affected by the same phenomena under investigation in this study.

The sampling rate limitations were addressed, because the whole population affected by the phenomena under investigation was considered at both University X and University Y, because all the third-year audit students in the CA programmes at both universities who were attending class at the time the pre-test and post-test questionnaires were administered were invited to complete the questionnaires. In doing so, the sampling bias was restricted and good response rates were obtained for the pre-test, namely 73% of the target population which consisted of 725 third-year audit students in total for both universities. The post-test represented 68% of the target population. This mitigated many of the design threats of using questionnaires as an instrument of collecting data, as noted in chapter 2 (paragraph 2.3, page 33).

The sample population of the focus groups consisted of the students of University X who participated in the experiment, because these students were the only students who were subjected to the intervention (the newly developed audit simulation). All the students of University X who had completed the audit simulation were invited to join the focus group discussions to limit bias results. This resulted in 61 participants out of the target population of 345 students of University X. The latter represented 17% of the experimental group.

Tables 7-2 to 7-7 provide information with regard to the profile of the sample population in this study. These factors needed to be considered in the data analysis (paragraph 7.6.1, page 266) in order to ensure that the findings of this study were comparable to the findings of other research conducted in this field.

Furthermore, the results of the biographical analysis confirmed the author's argument that the sample population was well represented at both universities in the experiment with regard to any mediating variables that could affect the comparability of the results. It should also be noted that these biographical results included all the students who completed the post-test and pre-test questionnaires. In determining the effect of the simulation on the audit students' perceived broad competence, the results only included students who completed both the pre-test and post-test questionnaires (see paragraph 7.6.5, page 297). Hence, only students who completed both the pre-test and post-test questionnaires were included in the latter analysis.

Table 7-2: Number of students partaking in the experiment

Respondent groups in experimental design	Pre-test		Post-test	
	<i>N</i> *	%	<i>N</i> *	%
University X (pre-test, simulation, post-test)	311	58.6	305	61.4
University Y (pre-test, post-test)	220	41.4	191	38.6
Total respondents	531	100	495	100

*Frequency

From table 7-2, it is noted that 531 students from both universities participated in the pre-test questionnaire. The number of students partaking in the post-test questionnaire amounted to 495. Based on these findings it is clear that students from both universities were well presented in the study and completed the pre-test and post-test questionnaires.

Table 7-3: Respondents by gender

Gender included in the experimental design	Pre-test		Post-test	
	<i>N</i> *	%	<i>N</i> *	%
Female	318	59.9	238	48.1
Male	213	40.1	257	51.9
Total respondents	531	100	495	100

*Frequency

From table 7-3, it appears that both gender groups were sufficiently presented in the study.

Table 7-4: Respondents by race

Races presented in the experimental design	Pre-test		Post-test	
	<i>N</i> *	%	<i>N</i> *	%
Black	206	38.8	180	36.4
White	291	54.8	281	56.8
Coloured	17	3.2	19	3.8
Indian	11	2.1	10	2.0
Asian	0	0	2	0.4
Other	6	1.1	3	0.6
Total respondents	531	100	495	100

*Frequency

As seen in table 7-4 the majority of the respondents consisted of black and white audit students. This is in line with expectations, because the students at both universities were mainly white and black.

Table 7-5 Respondents by mother tongue

Mother tongues presented in the experimental design	Pre-test		Post-test	
	<i>N</i> *	%	<i>N</i> *	%
English	29	5.5	32	6.5
Afrikaans	288	54.2	284	57.3
African language	194	36.5	152	30.7
Other	20	3.8	27	5.5
Total respondents	531	100	495	100

*Frequency

Table 7-5 confirms the racial representation of the students (table 7-4), seeing that the majority of the students had an African language or Afrikaans as mother tongue. This is in line with expectations, because the majority of the students at both universities came from an African or Afrikaans background. This means that the majority of students did their simulation in their second or third language.

Table 7-6: Respondents by enrolment status

Enrolment status of students included in the experimental design	Pre-test		Post-test	
	N*	%	N*	%
Full-time	507	95.5	471	95.2
Part-time	24	4.5	24	4.8
Total respondents	531	100	495	100

*Frequency

Table 7-6 indicates that almost the entire population consisted of students who were enrolled full-time at the universities to study toward the CA qualification. This is due to the fact that only University X provided students with the opportunity to study part-time. The part-time students were well presented in the results obtained, because 24 out of the 25 (96%) students enrolled part-time at University X completed the pre-test questionnaire. The latter is also true for the post-test questionnaire because, yet again, 24 out of the 25 (96%) students completed the questionnaire.

Table 7-7: Respondents by level of practical experience in audit practice

Students' level of practical experience in audit practice presented in the experimental design	Pre-test		Post-test	
	N*	%	N*	%
0 months	367	69.1	344	69.5
1–6 months	107	20.2	108	21.8
12 months	16	3.0	17	3.4
More than 12 months	41	7.7	26	5.3
Total respondents	531	100	495	100

*Frequency

From table 7-7, it can be concluded that the practical experience level of the audit students who completed both the pre-test and post-test questionnaires was in line with expectations, because the majority of the students enrolled at University X and Y were enrolled full-time (table 7-6).

The next section elaborates on how the experiment was conducted, followed by a discussion on how the data were obtained.

7.4 Conducting the experiment

The third-year audit students in the CA programme at both University X (the experimental group) and University Y (the control group) were asked to complete the pre-test

questionnaire in the same week at the campuses of the universities. The experimental group was then asked to complete the audit simulation over a period of ten weeks and to submit the completed simulation at the end of this period, whereas the control group continued with their normal lectures in auditing without completing the audit simulation. The post-test questionnaire was then completed by students in both the experimental and control group within one week after the experimental group had completed the simulation. The lecturers of the third-year audit subject at both universities confirmed, through discussions with the author, that their students had not taken part in any other audit simulations or active learning methodologies (paragraph 3.2.2.2, page 83) before the experimental period and had not done so up until completion of the post-test questionnaire. How the data were collected is discussed next.

7.5 The data-gathering process

As noted from the research design (paragraph 7.2, page 249), a group-administered questionnaire and various focus group discussions were applied in gathering the data for this study. This section discusses how the data were obtained by means of applying a mixed methodology, and how the validity and reliability of the data were ensured by, first, considering the questionnaire design, followed by a discussion on the focus group discussions (paragraph 7.5.1, page 256). The ethical considerations and how the author ensured that all ethical requirements were met in obtaining the data are also described (paragraph 7.5.2, page 263).

7.5.1 Obtaining the data

As noted in chapter 2 (paragraph 2.3.1, page 35), questionnaires have possible design limitations or weaknesses and it is, therefore, imperative to ensure that a properly designed questionnaire and its effect on the validity and reliability of the data obtained from respondents are considered. It was also indicated that researchers must approach the task of constructing a questionnaire not as an isolated effort, but as one informed by the research objectives (Blair *et al.*, 2014:177). In doing so, the structure, purpose, validity and reliability of the questionnaire design need consideration and are discussed next.

The purpose of the questionnaire was determined by the fifth secondary research objective, namely to evaluate whether a newly developed audit simulation would assist in enhancing the audit students' perceived broad competence (paragraph 1.5, page 15). This objective had to be met by empirical means; thus, the pre-test and post-test questionnaires (annexure A, page 410, and annexure B, page 420) were divided into seven main sections

with questions framed according to the findings in chapter 5 (paragraph 5.2 to 5.4, page 140 to 158). The findings related to the various competencies informed by the subject content included in the various steps of the audit process. These questions consisted of six demographical questions (questions 1 to 6, annexure A, page 410, and annexure B, page 420) and 171 close-ended questions (questions 7 to 177, annexure A, page 410, and annexure B, page 420) on a five-point Likert scale. The latter set of questions were aimed at the views of students on whether the current teaching methodology applied in the audit classroom of their respective universities effectively assisted and enabled them to be deemed competent in auditing and assurance, as well as acquire the generic and pervasive skills, as noted in chapter 5 (paragraph 5.2-5.4, page 140-158).

The five-point Likert scale was obtained from the Statistical Consultation Services of the North-West University (Potchefstroom Campus), who confirmed that this scale would be the most appropriate measure to obtain the students' views on the issues stated above. The scale ranged from 1 – *Not at all*; 2 – *Very little*; 3 – *Somewhat*; 4 – *Quite a bit*; to 5 – *To a great extent*. In analysing the results (paragraph 7.6, page 266), any mean score below 4 – *Quite a bit* indicated to the author that there was room for improvement and that not enough was being done to ensure that students felt confident in the various competencies related to auditing and assurance, and the generic and pervasive skills.

The last section (only included in the post-test questionnaire) contained questions on the audit students' attitude toward the audit simulation (question 178 to 186, annexure B, page 420). Noyes and Garland (2005:234) claimed that students' attitude toward an object influences their behaviour and might hinder the learning that should take place by performing the simulation. The author, therefore, deemed it appropriate to measure the audit students' attitude toward completing the audit simulation based on the attitude measure developed by Kay in 1989 and revised in 1993, used by Noyes and Garland (2005:234). Fouché (2006:154) and Van der Merwe (2013:152) also applied this attitude measure in their studies and reported valuable insights on students' attitudes toward an instrument applied as educational tool. Furthermore, by obtaining the students' view through the attitude measure, the author ensured that the students, as critical variable to consider in the overall teaching-learning environment, were involved (paragraph 1.1, page 1).

However, this instrument was newly constructed and no other suitable instrument was available that measures audit students' perceived competence. In an attempt to mitigate the consequent design threats to validity and reliability, the author implemented several techniques, as noted in chapter 2 (paragraph 2.3.1, page 35). The validity, reliability and completeness of the questions were, thus, ensured by accurately compiling questions based

on the competencies in the subject content requirements, as noted in chapter 5 (paragraph 5.2 to 5.4, page 140 to 158). The questions were also examined by a number of experienced research and audit academic professionals at University X and a qualified statistician at the Statistical Consultation Services of the North-West University (Potchefstroom Campus).

Separate meetings were arranged with five honours audit students in the Financial Accountancy programme at University X who represented a wide range of demographical backgrounds. These students were selected because they were deemed to be on the same level of knowledge and competence of the third-year audit students in the CA programme of University X at the time the study was performed. The curriculum of the third-year CA programme was followed in the Financial Accountancy honours year and these students were deemed to be able to identify, among other things, any questions on the questionnaire that might be misinterpreted by third-year audit students in the CA programme. At this meeting the questionnaires were discussed with these students to determine whether they understood each question as intended by the author. A few alterations were made based on these discussions before the pre-test and post-test questionnaires were distributed to the participants.

Owing to time constraints the questionnaire was not pilot tested before the experiment took place, but its reliability and validity were confirmed by an exploratory principal components factor analysis on each group of questions in the pre-test questionnaire using IBM SPSS (SPSS, 2011). This was done to confirm whether the different questions in the questionnaire on each competence, as identified in the literature (paragraph 5.2 to 5.4, page 140 to 158), measured the same construct. In confirming the factorability of the data, the following measures suggested by Pallant (2013:190) were applied to the questionnaire:

- *Kaiser-Meyer-Olkin Measure of Sampling Adequacy* (KMO), which suggests a minimum value of 0.6 for a worthy factor analysis; and
- *Bartlett's Test of Sphericity* (BTS), which suggests a significance value of $p < 0.05$ for the factor analysis to be appropriate.

After confirming the factorability of the data the questions subjected to factor analysis were reduced to the 19 components (competencies) based on the several competency requirements, as stated in chapter 5 (paragraph 5.3 to 5.4, page 142 to 158). Table 7-8 illustrates the results of the exploratory factor analysis, confirming the construct validity and the factorability of the data obtained from the pre-test questionnaire, as well as the results of the Cronbach alpha coefficient used to measure the reliability (paragraph 2.3.1, page 35).

Table 7-8: Reliability and construct validity of the pre-test questionnaire

Competencies	Number of questions	KMO	BTS	Percentage of variance explained by first factor	Range of question communalities	Cronbach alpha	Average inter-item correlation
Analyses, evaluates and advises on assurance needs	10	.886	.000	55.62%	.637–.745	.911	.505
Identifies and considers issues related to accepting an engagement	6	.761	.000	55.94%	.520–.597	.842	.470
Establishes the terms of the engagement	4	.739	.000	64.90%	.503–.722	.812	.529
Evaluates and assesses the key risks on the performance of the engagement	13	.937	.000	58.42%	.435–.747	.941	.547
Determines which rules, standards or policies are to apply to the subject matter being evaluated	3	.729	.000	77.27%	.744–.795	.852	.659
Develops materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement	5	.845	.000	68.53%	.535–.789	.883	.601
Designs effective and efficient procedures based on the engagement's scope and the assessed risks	4	.785	.000	71.91%	.596–.776	.870	.626
Executes the work plan	14	.937	.000	60.61%	.316–.742	.949	.569
Documents the results of procedures performed	5	.860	.000	74.46%	.608–.818	.913	.679

Table 7-8: Reliability and construct validity of the pre-test questionnaire (continued)

Competencies	Number of questions	KMO	BTS	Percentage of variance explained by first factor	Range of question communalities	Cronbach alpha	Average inter-item correlation
Evaluates the evidence and draws conclusions	20	.942	.000	54.83%	.576–.870	.956	.523
Drafts the report upon completion of the engagement	3	.699	.000	80.41%	.699–.865	.876	.704
Prepares information for meetings with stakeholders	7	.865	.000	71.01%	.528–.789	.931	.659
Identifies and evaluates the risks pertaining to the financial information system	2	.500*	.000	77.28%	.773	.706	.546
Identifies and documents the key internal controls (including IT-related controls) implemented in an entity	13	.937	.000	57.28%	.520–.775	.937	.535
Evaluates internal control	7	.866	.000	61.02%	.400–.730	.890	.540
Designs, implements and manages the quality control system in the firm	3	.719	.000	74.43%	.728–.734	.828	.616
Ethical behaviour and professionalism	10	.952	.000	73.17%	.298–.839	.953	.690
Personal attributes	11	.944	.000	69.03%	.595–.761	.955	.658
Professional skills	30	.965	.000	61.01%	.579–.775	.978	.595

* The KMO for this grouping was below the recommended level of 0.6, but the BTS was below the significance value of $p < 0.05$ by reporting a $p = 0.00$ and only one factor was extracted in the exploratory factor analysis with the percentage of variance explained by the first factor's being 77.28%. Furthermore, this competency consisted of only two questions. Based on these findings, the fact that all the other factors indicated a KMO value of more than 0.6, a BTS significance value of $p < 0.05$, and the fact that no item had a low correlation (< 0.3) with the total, the author deemed the data appropriate for factor analysis.

From table 7-8 it can be concluded that the pre-test questionnaire was reliable because the Cronbach alpha coefficient ranged between 0.706 and 0.978 for all competencies and, therefore, met the minimum required level of 0.70 (Delpont *et al.*, 2013:177; Peterson, 1994:382; Van der Merwe, 2013:116). The construct validity of the pre-test questionnaire was also confirmed due to the fact that:

- The average inter-item correlations were larger than 0.15;
- The percentage of the variance explained by the first factor was more than 50% in all circumstances;
- The scree test confirmed that only one factor was appropriate in all circumstances; and
- No individual questions, except for one, reported a slightly lower communality (0.298) than the recommended minimum communality level of 0.3, as suggested by Pallant (2013:206).

Based on these findings that proved the reliability and construct validity of the pre-test questionnaire, the same questionnaire was applied for the post-test, except for the attitude measure added, as discussed earlier in this section. How the data were obtained by means of the focus group discussions are discussed next.

After obtaining the results of the quantitative analysis, focus group discussions were held with the students who volunteered to participate in the discussion within one week after completing the audit simulation and the post-test questionnaire, as stated earlier (paragraph 7.3, page 251). The number of groups were determined by randomly selecting students from the volunteers to compile groups of between six and eight students, as suggested by Davies (2007:168-173), up until all students who volunteered were divided into various groups. By doing so, eight focus group discussions were held and consisted of a variety of students from different races, cultures, genders and from all the participating

campuses of University X. The author is of the opinion that adequate coverage of the themes that emerged from the focus group discussions was obtained in this way because, according to Davies (2007:149), qualitative research ends when the themes emerging from the research start to repeat constantly, i.e. when the point of saturation is reached. After the fifth focus group discussion was held, it was clear that the groups were raising the same matters than those that had been discussed up until that point. However, it was decided to conduct the remaining three focus group discussions as planned to ensure that all students who had volunteered were given the opportunity to contribute. The risk of bias results was, therefore, mitigated further.

The discussions followed an unstructured approach designed by the author by asking each focus group four open-ended questions. This was done to answer the research objective and to triangulate the results. The first question was based on the results of the quantitative analysis, discussed later in this chapter (paragraph 7.6.5, page 297), which indicated that the audit simulation did enhance the audit students' perceived broad competence. The question was framed as follows:

Why do you think the audit simulation assisted you to better comprehend the audit subject?

The second to fourth questions were to assist the author in evaluating the audit simulation, in addition to the attitude measure applied as part of the quantitative analysis, as discussed earlier in this section. These questions were framed as follows:

What went well during the audit simulation?

What did you not enjoy about the audit simulation?

Do you have any other comment you would like to add?

The author was part of each focus group and only facilitated the questions so that students could formulate their answers and ideas and provide any other valuable information that emerged as a result of the focus group discussions themselves.

After obtaining the permission of the students of each focus group, the discussions were voice-recorded and then independently transcribed (paragraph 2.4.6, page 43). By using the software tool ATLAS.ti (paragraph 2.4.6, page 43), the transcripts were thoroughly content analysed after multiple readings so as to identify all the reasons and their motivations (themes) students provided on why they think the audit simulation assisted them to better comprehend the audit subject. This approach was also followed in analysing the data

obtained on the questions that evaluated the audit simulation. This was done by extracting all the quotes from the focus group transcripts for the first question and categorising each quote into a possible reason or motivation (theme). The same approach was followed to evaluate the audit simulation. Only themes that were evident across all the focus groups were retained after applying careful judgement. Any quotes extracted in Afrikaans were accurately translated into English. The author took great care in ensuring that the meaning as intended by the Afrikaans students was not changed in any way. This was done by performing multiple readings of the Afrikaans quotes and only then translating them into English, followed by a comparison of the translated quotes to the original Afrikaans quotes.

The paragraphs that follow discuss how the ethical requirements were met in performing the study and in gathering the data.

7.5.2 Ethical reflections

The term “ethics” is derived from the Greek term *ethos* (ἦθος or ἦους) (Byron, 1977:32) which describes the “moral principles that govern a person’s behavior or the conducting of an activity” (Oxford Dictionaries, 2014). Adams *et al.* (2009:35) described ethical behaviour as being responsible, honest and acting in an honest manner with the necessary level of integrity, whereas May (1993:41) defined ethics as a set of standards and rules governing behaviour between right and wrong when pursuing a specific goal. From these definitions, it can be concluded that, when people act ethically in general, they act objectively and with integrity.

These principles are also significant when conducting research specifically in the field of education (Coetzee, 2003:114). The ethical considerations in research in general (paragraph 7.5.2.1, page 263) and how they were applied in this study (paragraph 7.5.2.2, page 264) are discussed next.

7.5.2.1 Ethical considerations in conducting research

Researchers have to concern themselves with what is wrong and what is right in conducting research (Brynard & Hanekom, 2010:84; Mouton, 2009:238). Berg (2007:53) stated that, over the past decades, the methods, processes and latitude of research have increased and have placed more focus on the issue that researchers must perform their research in an ethical manner. Hence, researchers must always strive to perform research in a manner that is objective and characterised by an unprecedented high level of integrity (Mouton, 2009:240). These research activities should be morally acceptable as well (Brynard &

Hanekom, 2010:84). Coetzee (2003:116) claimed that, when research involves human participants, these participants may not be harmed in any way.

To conduct research with integrity and in a manner that is objective, morally sound, and not harmful to participants, Flick (2008:69) suggested several principles, also highlighted by Coetzee (2003:116), which researchers in all disciplines should apply with responsibility and care. These include (Flick, 2008:69):

- Individuals partaking in the research should be well informed about what the research entails;
- Participants should know beforehand that they will be partaking in a research project and they should be given the opportunity to choose to participate;
- The privacy of the respondents partaking in the research should be respected;
- The confidentiality of the information provided by these participants should be guaranteed and maintained;
- Data should be collected, processed and interpreted in such a manner that the integrity of the data is not compromised by any omissions or fraud; and
- The well-being of all participants should be considered so as to not disadvantage any of them.

Because these ethical considerations were applied in the various research projects performed in this study, the author is of the opinion that the research was conducted objectively, with integrity and did not conflict with any moral principles. The following section discusses the processes followed to build a strong ethical foundation for the study.

7.5.2.2 The ethical foundation of the study

Because the respondents in this study were students (paragraph 7.3, page 251), the author took great care to ensure that the research did not harm or disadvantage any of the respondents. This was done as follows:

- All students knew that they were partaking in the study because they were notified of the study by means of oral and written discussion (see annexure A, page 409 and annexure B, page 419);
- All students were well informed about what the study entailed and why their input was needed. These aspects were discussed with them and they received relevant information

in writing as part of the introduction to the pre-test and post-test questionnaire (see annexure A, page 409 and annexure B, page 419);

- All respondents were given the opportunity to choose to partake in the study. In the case of the control group, the students were given the opportunity to partake in the experiment, and after declining this opportunity due to the fact that they were enrolled at a different university, the permission and consent of these students were obtained to act as the control group in the study;
- The privacy of the respondents was respected and no students were specifically identified in the results;
- The confidentiality of the information provided by the participants were maintained at all times and students were guaranteed by means of oral and written discussion that the information they provided would be kept confidential (see annexure A, page 409 and annexure B, page 419);
- Care was taken to not compromise the integrity of the data by any omissions or fraud while collecting, processing and interpreting the data. All the data gathered were included in the data analysis. The quantitative data analysis was performed independently by the Statistical Consultation Services of the North-West University (Potchefstroom Campus) by using the software package IBM SPSS. The author used the software package ATLAS.ti to content analyse the qualitative data, which further assisted in the processing of the qualitative data and ensuring the accuracy of the results. The interpretation of the quantitative results was verified by the Statistical Consultation Services of the North-West University (Potchefstroom Campus); and
- The well-being of all participants were set as the number one priority while the data were being collected, processed and interpreted and no respondents were disadvantaged in any way.

Ethical consent was also obtained from the Ethics Committee at the Faculty of Economic and Management Sciences of the North-West University (Potchefstroom Campus) for the study.

The analysis of the results of the mixed methodology applied and discussed up until this point is illustrated, interpreted and discussed next.

7.6 Analysis of results

In this section, the results of the pre-test and post-test questionnaire, as part of the experimental research design, and the focus group discussions are given, as well as an analysis of these results.

First, the effect will be discussed of the students' biographical background on whether they perceived the current teaching methodology to be assisting and enabling them to be deemed competent in the competencies for auditing and assurance and generic and pervasive skills (paragraph 7.6.1, page 266). This will be followed by the results of a t-test for the effect of biographical background on the academic performance of the audit students (paragraph 7.6.2, page 274), as well as the descriptive statistics on auditing and assurance (paragraph 7.6.3, page 279) and generic and pervasive skill competencies (paragraph 7.6.4, page 291) obtained from the pre-test questionnaire. The results of the experimental design, based on a t-test for the effect of the simulation (paragraph 7.6.5, page 297), are discussed next, as well as the results of the focus group discussions (paragraph 7.6.6, page 308). A conclusion is then drawn as to whether the newly developed audit simulation did indeed enhance the perceived broad competence of audit students (paragraph 7.6.7, page 317). Finally, an evaluation of the simulation, as given by the participants, is discussed with reference to both the data obtained from the post-test questionnaire and the focus group discussions (paragraph 7.6.8, page 319).

7.6.1 T-test for the effect of biographical backgrounds on perceived broad competence

It was noted in chapter 4 (paragraph 4.2.1, page 111) that, in general, students' biographical backgrounds have an effect on their perceptions of the teaching-learning environment. The questionnaire asked students whether the current teaching methodology applied in the audit classroom, which forms part of the audit teaching-learning environment, is effectively assisting and enabling them to be competent in the various competencies associated with auditing and assurance and generic and pervasive skills (paragraph 5.3 to 5.4, page 142 to 158). In this way, students' perceptions on one aspect of the audit teaching-learning environment were obtained.

The author, therefore, deemed it appropriate to determine whether the biographical backgrounds of the third-year audit students participating in the experiment had any effect on their perceptions regarding the current teaching methodology in the audit classroom. An independent samples t-test for the first five biographical independent variables was performed based on the data obtained from the pre-test questionnaire. According to Blaikie (2004:193), the t-test determines whether the value of the *t*-statistic, which is arrived at by procedure, indicates that the sample characteristics or patterns lie in the extreme tails of the normal curve and assume no difference between the two group means (Fouché, 2006:172).

Levene's test was also performed, and in cases where the assumption of homogeneity of variances was violated ($\text{Sig} \leq 0.05$), the Sig values which compensate for the violation were reported, as proposed by Pallant (2013:250). Because a non-random sample was used in the study, the results were interpreted based on effect sizes (*d*), which indicate practical significance (Van der Merwe, 2013:98), instead of the Sig (*p*) values, which indicate statistical significance that are disclosed for completeness purposes only. As noted by Ellis and Steyn (2003:52), *d* is calculated as the mean difference divided by the maximum standard deviation of the two groups that are being compared (e.g. male versus female). Ellis and Steyn (2003:52) suggested the following guidelines for the interpretation of the effect size of *d*:

- Small effect: $d = 0.2$
- Medium effect: $d = 0.5$
- Large effect: $d \geq 0.8$ (also practically significant)

Tables 7-9 to 7-13 provide the results of the independent t-test for each of the biographical independent variables.

The two biographical factors that indicated the highest frequency, as per tables 7-3 to 7-6 (paragraph 7.3, page 251), were compared in each t-test.

Table 7-9: Testing the difference between the gender means (male vs female)

Dependent variable (competencies)	Sig	T-tests		
		<i>t</i> Value	<i>p</i> Value	<i>d</i> Value
Analyses, evaluates and advises on assurance needs	.839	-1.97	.050	.17
Identifies and considers issues related to accepting an engagement	.571	1.02	.306	.09
Establishes the terms of the engagement	.490	1.25	.214	.11
Evaluates and assesses the key risks on the performance of the engagement	.200	-.78	.433	.07
Determines which rules, standards or policies are to apply to the subject matter being evaluated	.661	-2.27	.024	.20
Develops materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement	.232	-1.48	.139	.13
Designs effective and efficient procedures based on the engagement's scope and the assessed risks	.274	-1.98	.048	.17
Executes the work plan	.809	-2.34	.019	.21
Documents the results of procedures performed	.653	-1.62	.106	.14
Evaluates the evidence and draws conclusions	.156	1.97	.050	.17
Drafts the report upon completion of the engagement	.486	-1.74	.082	.15
Prepares information for meetings with stakeholders	.897	-1.72	.087	.15
Identifies and evaluates the risks pertaining to the financial information system	.577	-.27	.788	.02
Identifies and documents the key internal controls (including IT-related controls) implemented in an entity	.834	-.27	.789	.02
Evaluates internal control	.914	-.79	.430	.07
Designs, implements and manages the quality control system in the firm	.266	-1.94	.053	.17
Ethical behaviour and professionalism	.692	2.38	.018	.21
Personal attributes	.764	2.39	.017	.21
Professional skills	.418	.17	.867	.01

Although the mean differences for a few competencies reached statistical significance with $p \leq 0.05$ (Pallant, 2013:250), assuming random sampling, all effect sizes (d) were small, with d varying between 0.02 and 0.21. It can, therefore, be concluded that no practically significant differences existed between male and female students on their perceptions on the current teaching methodology applied in the audit classroom. Hence, gender, in this study, seems not to have a significant impact on the students' perception.

Table 7-10: Testing the difference between the race means (black vs white)

Dependent variable (competencies)	Sig	T-tests		
		<i>t</i> Value	<i>p</i> Value	<i>d</i> Value
Analyses, evaluates and advises on assurance needs	.338	-.51	.610	.04
Identifies and considers issues related to accepting an engagement	1.00	3.00	.003	.27
Establishes the terms of the engagement	.324	1.44	.150	.13
Evaluates and assesses the key risks on the performance of the engagement	.295	2.18	.030	.19
Determines which rules, standards or policies are to apply to the subject matter being evaluated	.018	1.32	.186	.11
Develops materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement	.010	1.91	.056	.16
Designs effective and efficient procedures based on the engagement's scope and the assessed risks	.015	.79	.433	.07
Executes the work plan	.000	-2.74	.007	.23
Documents the results of procedures performed	.034	-.73	.464	.06
Evaluates the evidence and draws conclusions	.005	-2.14	.033	.19
Drafts the report upon completion of the engagement	.004	-.08	.282	.09
Prepares information for meetings with stakeholders	.037	-.55	.580	.05
Identifies and evaluates the risks pertaining to the financial information system	.000	.49	.623	.04
Identifies and documents the key internal controls (including IT-related controls) implemented in an entity	.065	-.46	.645	.04
Evaluates internal control	.012	.13	.897	.01
Designs, implements and manages the quality control system in the firm	.001	1.79	.074	.15
Ethical behaviour and professionalism	.011	-.88	.377	.08
Personal attributes	.000	-2.08	.039	.17
Professional skills	.003	-2.55	.011	.21

From table 7-10, it is noted that the mean differences for a few competencies reached statistical significance with $p \leq 0.05$, assuming random sampling (Pallant, 2013:250). Despite this fact, all effect sizes (d) were small, with d varying between 0.04 and 0.27. Therefore, no practically significant differences were found to exist between the perceptions of white and black students on the effectiveness of the current teaching methodology to assist and enable them to master the competencies tested in the pre-test questionnaire. Thus, in this study, race did not appear to have a significant effect on the students' perception.

Table 7-11: Testing the difference between mother tongue means (African language vs Afrikaans)

Dependent variable (competencies)	Sig	T-tests		
		<i>t</i> Value	<i>p</i> Value	<i>d</i> Value
Analyses, evaluates and advises on assurance needs	.614	-.69	.492	.06
Identifies and considers issues related to accepting an engagement	.994	2.56	.011	.23
Establishes the terms of the engagement	.293	2.08	.038	.19
Evaluates and assesses the key risks on the performance of the engagement	.353	2.52	.012	.22
Determines which rules, standards or policies are to apply to the subject matter being evaluated	.029	1.18	.237	.10
Develops materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement	.044	2.69	.007	.24
Designs effective and efficient procedures based on the engagement's scope and the assessed risks	.035	1.03	.302	.09
Executes the work plan	.002	-2.75	.006	.24
Documents the results of procedures performed	.051	-.95	.344	.08
Evaluates the evidence and draws conclusions	.031	-2.24	.026	.20
Drafts the report upon completion of the engagement	.011	-1.15	.252	.10
Prepares information for meetings with stakeholders	.043	-.99	.325	.09
Identifies and evaluates the risks pertaining to the financial information system	.000	.69	.491	.06
Identifies and documents the key internal controls (including IT-related controls) implemented in an entity	.077	-.39	.693	.03
Evaluates internal control	.023	-.06	.954	.01
Designs, implements and manages the quality control system in the firm	.03	-1.76	.080	.15
Ethical behaviour and professionalism	.019	-.77	.443	.07
Personal attributes	.000	-1.44	.151	.12
Professional skills	.020	-2.29	.022	.20

Although table 7-11 clearly showed that the mean differences for some competencies reached statistical significance with $p \leq 0.05$ (Pallant, 2013:250), assuming random sampling, all the effect sizes (*d*) were small and ranged between 0.01 and 0.24. Based on these findings, it can be concluded that the perceptions of students on the competencies tested in the pre-test questionnaire were not practically significantly affected by mother tongues differences.

Table 7-12: Testing the difference between the enrolment status means (full-time vs part-time)

Dependent variable (competencies)	Sig	T-tests		
		<i>t</i> Value	<i>p</i> Value	<i>d</i> Value
Analyses, evaluates and advises on assurance needs	.712	-1.43	.152	.30
Identifies and considers issues related to accepting an engagement	.617	-1.04	.297	.22
Establishes the terms of the engagement	.208	-.60	.548	.11
Evaluates and assesses the key risks on the performance of the engagement	.457	-.68	.497	.14
Determines which rules, standards or policies are to apply to the subject matter being evaluated	.844	.09	.932	.02
Develops materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement	.595	-1.84	.067	.39
Designs effective and efficient procedures based on the engagement's scope and the assessed risks	.964	-.08	.963	.02
Executes the work plan	.982	-.90	.370	.18
Documents the results of procedures performed	.725	-.76	.445	.16
Evaluates the evidence and draws conclusions	.744	-.35	.729	.07
Drafts the report upon completion of the engagement	.671	.09	.930	.02
Prepares information for meetings with stakeholders	.646	-.15	.884	.03
Identifies and evaluates the risks pertaining to the financial information system	.533	-.79	.428	.16
Identifies and documents the key internal controls (including IT-related controls) implemented in an entity	.353	.00	.996	.00
Evaluates internal control	.826	-.50	.618	.10
Designs, implements and manages the quality control system in the firm	.735	.023	.822	.05
Ethical behaviour and professionalism	.293	-.71	.478	.15
Personal attributes	.860	-.01	.994	.00
Professional skills	.166	.055	.583	.10

It is noted from table 7-12 that none of the mean differences in the competencies reached statistical significance, with no *p*-values ≤ 0.05 reported, assuming random sampling (Pallant, 2013:250). Furthermore, all the effect sizes (*d*) were small, with the highest practical effect size noted with *d* = 0.39. It can, therefore, be concluded that enrolment status of students who completed the pre-test questionnaire had no significant or practically

significant effect on their perceptions of how the current approach followed in teaching auditing aided in mastering the competencies.

To determine whether students' level of practical auditing experience had any effect on how they perceived the current teaching methodology, the Spearman rank order correlation test was performed. This test was chosen because the level of experience was seen as an ordinal biographical variable and not as a nominal biographical variable such as age and race. The independent samples t-test measured the nominal biographical variables (tables 7-9 to 7-12). In order to interpret the statistical significance (p) and practical significance (r) of the effect of practical experience on audit students' perceived competence, the following measures were applied, as suggested by Steyn (2009):

- Statistically significant where $p \leq 0.05$
- Small effect: $r = 0.1$
- Medium effect: $r = 0.3$
- Large effect: $r \geq 0.5$ (also practically significant)

Table 7-13 illustrates the results of the effect of practical experience on students' perceived competence in auditing and assurance and the generic and pervasive skill competencies, as discussed in chapter 5 (paragraph 5.2-5.4, page 140-158). It is clear that none of the competencies were statistically significantly affected by the level of practical experience of students. Because of the non-random sample of the respondents, the effect was interpreted based on effect sizes (r) (practical significance) instead of the Sig (p) values (statistical significance), which are disclosed for completeness purposes only.

From table 7-13, it is thus noted that no competencies were practically significantly affected by the level of practical experience, with only one competency, which measures students' ability to document the results of procedures, reporting an effect size of more than 0.1 ($r = .102$), which is still small. Based on this finding, it can be concluded that the students' level of practical experience did not have a significant or practically significant effect on whether they believed the teaching methodology applied in the audit classroom assisted and enabled them to demonstrate the competencies with regard to auditing and assurance, as well as the generic and pervasive skill requirements.

Table 7-13: The effect of practical experience on how students perceive their competence

Dependent variable (competencies)	<i>N</i>	<i>p</i> Value	<i>r</i> Value
Analyses, evaluates and advises on assurance needs	531	.029	.095
Identifies and considers issues related to accepting an engagement	531	.315	.044
Establishes the terms of the engagement	531	.636	.021
Evaluates and assesses the key risks on the performance of the engagement	531	.155	.062
Determines which rules, standards or policies are to apply to the subject matter being evaluated	531	.072	.078
Develops materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement	531	.190	.057
Designs effective and efficient procedures based on the engagement's scope and the assessed risks	531	.186	.058
Executes the work plan	531	.213	.054
Documents the results of procedures performed	531	.019	.102
Evaluates the evidence and draws conclusions	531	.131	.066
Drafts the report upon completion of the engagement	531	.275	.047
Prepares information for meetings with stakeholders	531	.375	.039
Identifies and evaluates the risks pertaining to the financial information system	531	.207	.055
Identifies and documents the key internal controls (including IT-related controls) implemented in an entity	531	.617	.022
Evaluates internal control	531	.678	.018
Designs, implements and manages the quality control system in the firm	531	.281	.047
Ethical behaviour and professionalism	530*	.696	-.017
Personal attributes	530*	.789	.012
Professional skills	530*	.845	.009

*One student did not complete this portion of the pre-test questionnaire

In summary, from the findings in tables 7-9 to 7-13, it can be concluded that the biographical background, which included variables such as gender, race, mother tongue, enrolment status and level of practical experience, did not have an effect on whether students perceived the teaching methodology applied in the audit classroom at University X and University Y to be effective in enabling and assisting them to be deemed competent in the various competencies in auditing and assurance as well as the generic and pervasive skill

requirements (paragraph 5.2 to 5.4, page 140 to 158). This finding is not in line with the findings of other researchers in the field of education in general, as stated in chapter 4 (4.2.1, page 111), but it seems that biographical background variables do not affect the perceptions of students on the audit teaching-learning environment. Caution should be taken not to overgeneralise these results due to the non-random sample of the students participating in this study. This finding might also indicate that the biographical backgrounds of students do not have an effect on their actual academic performance in the audit subject, which is not the case as seen from the literature (paragraph 4.2.2, page 124). Further research in this regard is necessary to confirm this assumption. The author, therefore, deemed it appropriate to determine whether any of the biographical variables considered earlier in tables 7-12 to 7-13 (paragraph 7.6.1, page 266) had any effect on the academic performance of audit students who completed the pre-test.

The paragraph that follows states the results of the test to determine whether the biographical variables indeed had any effect on the academic performance of the audit students.

7.6.2 T-test for the effect of biographical background on academic performance

In this section, the results are stated of the test as to whether the biographical variables considered in the pre-test questionnaire had any effect on the actual academic performance of the audit students. The results include only the effect of biographical variables on the academic performance of the third-year students of University X participating in the experiment, because the audit marks used to determine the effect, if any, were only available for University X at the time the study was conducted. The audit marks used in this study were those of the most recent half-year audit examination written by the third-year audit students who took part in the audit simulation. These marks were used because, according to the author, they would have represented the students' most recent and accurate knowledge level in the audit subject. These marks were also the marks students obtained just prior to participating in the audit simulation.

In testing whether the biographical variables in the pre-test questionnaire had any effect on the actual academic performance of the audit students at University X, the independent samples t-test that was applied in determining whether the biographical background of students had any effect on their perception of the current teaching methodology

(paragraph 7.6.1, page 266) was performed. Hence, all measures of interpretations and other statistical assumptions stayed the same.

Table 7-14 that follows illustrates the statistical (p) and practical (d) significance of whether the biographical variables in the pre-test questionnaire had any effect on the actual academic performance of the third-year audit students at University X. It also includes some descriptive statistics on the academic performance of these students. The two biographical factors that indicated the highest frequency as per tables 7-3 to 7-6 (paragraph 7.3, page 251) were, again, applied in each t-test.

Table 7-14: The effect of biographical variables on the academic performance of audit students

Biographical variable		N	Mean %	Std Deviation	Sig	T-tests		
						t Value	p* Value	d# Value
Gender	Female	182	47.64	.172	.966	3.30	.001	.37
	Male	129	40.99	.178				
Race	Black	74	33.59	.144	.116	-7.30	.000	.86
	White	217	48.49	.173				
Enrolment status	Full-time	287	45.64	.178	.141	3.07	.002	.74
	Part-time	24	32.57	.127				
Mother tongue	African language	72	34.04	.146	.158	-6.40	.000	.84
	Afrikaans	217	48.53	.172				

* $p \leq 0.05$ – Statistical significance

$d = 0.2$ – Small effect; $d = 0.5$ Medium effect; $d \geq 0.8$ – Large effect and practically significant

From table 7-14, the following is noted with regard to gender differences in audit students:

- Female students outperformed their male counterparts, with mean percentages of 47.64% and 40.99% respectively in the audit subject; and
- Although a statistically significant difference was found in the academic performance of the third-year male and female audit students at University X ($p \leq 0.05$), the effect size is below medium ($d = 0.37$) and, therefore, the difference is not practically significant.

This finding is in line with other studies in the field of accounting education, as noted in chapter 4 (paragraph 4.2.2.1, page 125), as various researchers such as Barnes *et al.* (2009:51), Byrne and Flood (2008:208) and De Hart *et al.* (2011:180) also proved that gender does not have a significant effect on students' performance in accounting education

in general. Furthermore, these results concur with the findings of Gammie *et al.* (2003:177) who reported that female students outperform their male counterparts in accounting and auditing modules (paragraph 4.2.2.1, page 125). It can, therefore, be concluded that, although female students seem to be outperforming their male counterparts in the audit subject, it appears that gender did not have a practical significant impact on the academic success of the audit students.

On the other hand, the variable of race painted a completely different picture. The following is noted from table 7-14:

- The white students outperformed the black students, with mean percentages of 48.49% and 33.59% respectively in the audit subject; and
- In addition to the statistically significant difference in the academic performance between the black and white third-year audit students at University X ($p \leq 0.05$), the effect size is large, with $d = 0.86$. This indicates that the audit students' race, in this study, did seem to have a statistically and practically significant effect on the students' academic performance in the third-year audit subject at University X.

Furthermore, this finding corroborates those of other researchers in a South African context, such as that of Huysamen (2000:146) and the SAICA January 2014 ITC results (SAICA, 2014c), which revealed that white students perform significantly better than their African counterparts. It also stands in contrast with the findings of Baard *et al.* (2010:138), who did not find any effect of students' race on their academic performance (paragraph 4.2.2.1, page 125). Based on these findings, it seems that, from a South African perspective, and confined to the boundaries of University X, white students are still outperforming their black peers in the audit subject. Further research in this regard could be useful to not only determine whether race has an impact on the students' performance in other subjects in the accounting education field, but to also obtain the reasons for this phenomenon.

Enrolment status also proved to be affecting performance in the audit subject at University X. From table 7-14, the following is noted:

- Students who were enrolled full-time obtained higher marks ($M = 45.64\%$) on average in the third-year audit subject than those of their part-time counterparts ($M = 32.57\%$); and
- There is a statistically ($p = 0.002$) and almost practically ($d = 0.74$) significant difference between students who were enrolled full-time versus being enrolled part-time.

It can, therefore, be concluded that enrolment status might have an effect on students' academic performance in general, but it definitely seems evident in the audit subject specifically. This observation is in line with the results of the study performed by Katsikas and Panagiotidis (2011:152), who explored the effect of whether full-time or part-time enrolment, among other things, has an effect on student performance (paragraph 4.2.2.1, page 125). In this study, the researchers reported that students working full-time and studying part-time tended to achieve lower grades than students who were enrolled full-time (Katsikas & Panagiotidis, 2011:160).

Moreover, these findings agree with the results of the study performed by Jackling and Anderson (1998:70), as noted in chapter 4 (paragraph 4.2.2.1, page 125), with regard to academic performance in general. However, they are in contrast with results which indicated that part-time students from the second year of study onwards were outperforming their full-time student counterparts. The full-time third-year audit students at University X were, in fact, indicating better academic achievement in their third-year audit module than the part-time students.

Mother-tongue differences also proved to affect the academic performance of the third-year audit students at University X (table 7-14). From table 7-14, it is noted that:

- Afrikaans-speaking students were obtaining higher averages in the audit subject ($M = 48.53\%$) as opposed to the students who had an African language as their first language ($M = 34.04\%$); and
- There is a statistically ($p = 0.000$) and practically ($d = 0.84$) significant difference between students who had Afrikaans as their mother tongue as opposed to those with an African language.

As the students at University X could only study in Afrikaans or English, the conclusion made in chapter 4 (paragraph 4.2.2.1, page 125) was that studying in one's mother tongue presented an advantage to academic achievement. This seems to be the case in the audit subject, seeing that the students with an African language as their first language, and not Afrikaans or English, which might be their second, third or not even a language they speak, obtained lower marks in the audit subject. There could also be a link between these findings and those with regard to the race of the students but, as the purpose of the study was not to determine such a link, no further investigation was done to confirm or reject this supposition.

The last variable (not included in table 7-14) determined whether the audit students' level of experience in audit practice had an effect on their academic performance in the audit

subject. Owing to the ordinal nature of this variable, as noted earlier (paragraph 7.6.1, page 266), the Spearman rank order correlation test was performed instead of the independent samples t-test, which measures nominal biographical variables (table 7-14). The same measures, as suggested by Steyn (2009) and used earlier (paragraph 7.6.1, page 266) to interpret the results, are applicable here and include:

- Statistically significant where $p \leq 0.05$
- Small effect: $r = 0.1$
- Medium effect: $r = 0.3$
- Large effect: $r \geq 0.5$ (also practically significant)

Table 7-15 illustrates the results of this test on the academic performance of the third-year audit students at University X.

Table 7-15: The effect of practical experience on the academic performance of audit students

Biographical variable	<i>N</i>	<i>p</i> Value	<i>r</i> Value
Level of practical experience	311	.248	-.066

It was found that practical experience has no statistical ($p = 0.248$) or practical ($r = -.066$) significant effect on students' academic achievement in auditing. This stands in contrast with the findings of De Hart *et al.* (2011:180) who reported that students with practical experience of what they studied had a better understanding of the theoretical components of the subject content (paragraph 4.2.2.1, page 125). Gul and Fong (1993:39) also noted that prior experience of the subject content or exposure to the subject content in practice have a positive influence on student learning (paragraph 4.2.2.1, page 125), which is also in contrast with the findings of this study. Yet again, caution should be taken not to overgeneralise these findings due to the non-random sample selection applied, as well as the fact that the respondents had a very low level of practical experience, as mentioned earlier in table 7-7 (paragraph 7.3, page 251).

In summary, it can be concluded that, although the female students seem to be outperforming their male counterparts in the audit subject in general, it appears that gender did not have a significant impact on the academic success of the audit students. Furthermore, it seems that, from a South African perspective, and confined to the

boundaries of University X, white students are still outperforming their black peers in the audit subject and that enrolment status might have an effect on students' academic performance in general. It definitely seems evident in the audit subject specifically.

Mother-tongue differences proved to affect the academic performance of the third-year audit students at University X, as did the ability of students to study in their own mother tongue, seeing that it resulted in higher marks in the audit subject. The level of practical experience of the audit subject proved not to have affected the academic achievement of the third-year audit students at University X, although the literature (paragraph 4.2.2.1, page 125) indicated that practical experience in their field of study has a significant positive effect on students' performance. A possible reason for this could be that students, when doing vacation work in practice, do not get exposed to enough practical audit work in the short period of time to have an effect on their academic performance. Further research into this phenomenon might be useful.

A discussion follows on the descriptive statistics obtained from the pre-test questionnaire with regard to the competencies on auditing and assurance (paragraph 7.6.3, page 279) and generic and pervasive skills (paragraph 7.6.4, page 291).

7.6.3 Descriptive statistics on auditing and assurance competencies

The next few paragraphs are dedicated to learning more about the perceived auditing and assurance competence level of the students of both University X and University Y before the audit simulation had been introduced to the experimental group (University X). First, the results will be discussed of the one question in the questionnaire (question 7) that was not subject to factor analysis, as indicated earlier in this chapter (paragraph 7.5, page 256). The focus will then shift to the competencies supported and informed by the subject content and audit process and related to auditing and assurance (paragraph 5.3, page 142), as noted in chapter 5.

The results were obtained from the pre-test questionnaire completed by both student groups at the two universities. As noted earlier (paragraph 7.5, page 256), the students were asked whether the current teaching methodology applied in the audit classroom effectively assisted and enabled them to feel competent in the various competencies supported and informed by the subject content requirements, as stated in chapter 5 (paragraph 5.3, page 142). Table 7-16 summarises the descriptive statistics on these competencies.

Table 7-16: Descriptive statistics on auditing and assurance competencies

Dependent variable (competencies)	N	Mean	Std Deviation
Analyses, evaluates and advises on assurance needs	531	3.14	.707
Identifies and considers issues related to accepting an engagement	531	3.70	.712
Establishes the terms of the engagement	531	3.85	.794
Evaluates and assesses the key risks on the performance of the engagement	531	3.52	.709
Determines which rules, standards or policies are to apply to the subject matter being evaluated	531	3.17	.847
Develops materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement	531	3.42	.820
Designs effective and efficient procedures based on the engagement's scope and the assessed risks	531	3.08	.831
Executes the work plan	531	2.88	.831
Documents the results of procedures performed	531	3.02	.888
Evaluates the evidence and draws conclusions	531	2.89	.801
Drafts the report upon completion of the engagement	531	2.80	.936
Prepares information for meetings with stakeholders	531	3.02	.890
Identifies and evaluates the risks pertaining to the financial information system	531	3.53	.849
Identifies and documents the key internal controls (including IT-related controls) implemented in an entity	531	3.53	.699
Evaluates internal control	531	3.34	.711
Designs, implements and manages the quality control system in the firm	531	3.04	.894

As noted earlier (paragraph 7.5, page 256), the five-point Likert scale of the questionnaire ranged from *1 – Not at all*; *2 – Very little*; *3 – Somewhat*; *4 – Quite a bit*; to *5 – To a great extent*. Any mean score below *4 – Quite a bit* showed that the current teaching methodology in the respective audit classrooms of the participating universities was not deemed to be effective enough and that there was room for improvement.

The only question not subject to factor analysis asked the students whether the teaching methodology applied in the audit classroom enabled them to understand the audit process as a whole (question 7, annexure A, page 409). The mean score of 3.57 (with $N = 531$, and standard deviation = .828) confirmed the author's argument stated in the introduction to this

study (paragraph 1.1, page 1) that a problem still exists with regard to which approach to follow in teaching auditing at an under- and postgraduate level to ensure that (Barac, 2012:48; Helliard *et al.*, 2006:6):

- Accounting students obtain a holistic view of what auditing entails; and
- This theoretical knowledge is then applied when performing an audit in practice.

The fact that the views of audit students of two SAICA-accredited universities were obtained further broadens the generalisability of this argument.

This finding is further clarified in table 7-16, as overall the third-year audit students at University X and University Y indicated that there was room for improvement in the teaching methodology. This is because no auditing and assurance competency obtained a mean score of greater or equal to 4. This would have indicated that the audit lecturers at the participating universities were applying a teaching methodology that enabled the participating students to feel competent, to a great extent, in the various auditing and assurance competencies.

The competencies where students indicated lower levels of perceived competence relative to other competencies include:

- Executing the work plan ($M = 2.88$);
- Evaluating the evidence and drawing conclusions ($M = 2.89$); and
- Drafting the report upon completion of the engagement ($M = 2.80$).

This finding indicates problem areas in the students' perceived competence levels in the field of auditing and assurance and in the effectiveness of the current approach followed in audit education. More specifically, these students were in the last semester before graduating, which means that they would probably have entered practice without having achieved the optimal competence levels.

The findings on each of these competencies are discussed in more detail next (paragraphs 7.6.3.1 to 7.6.3.15). The findings of the individual questions pertaining to the specific competencies are also particularised (questions 8 to 126, annexure A, page 410).

7.6.3.1 Analysing, evaluating and advising on assurance needs

This competency aimed to establish whether the teaching methodology applied in the audit classroom at University X and University Y did in fact assist students in understanding and

being able to analyse, evaluate and advise on the various assurance and non-assurance services that auditors in public practice render to their clients. The overall mean of 3.14 is not ideal. Students indicated that they had a low understanding of the various types of other services (non-assurance) available ($M = 3.17$) and when each type of other services should be performed ($M = 3.11$). Although the various types of assurance services available ($M = 3.40$) obtained a higher level of understanding, students showed less understanding of when each type of assurance service should be performed ($M = 3.22$).

This lack of understanding the theoretical subject content translated quite clearly into the students' perceived ability to analyse, evaluate and advise on the various assurance and non-assurance services. It was noted that students felt less competent in being able to identify other services appropriate in meeting an entity's needs ($M = 2.99$) and any other standards applicable to a particular engagement ($M = 2.93$). Students also indicated that the teaching methodology applied in the classroom did not fully equip them with the ability to identify i) assurance services appropriate in meeting an entity's needs ($M = 3.05$); ii) accounting standards ($M = 3.23$); iii) the auditing standards ($M = 3.24$); and iv) the legislation applicable to a particular engagement ($M = 3.02$).

7.6.3.2 Identifying and considering issues related to accepting an engagement

This competency in the questionnaire aimed to determine whether students felt competent in performing the pre-engagement activities before a client could be accepted for an assurance or non-assurance engagement. The overall mean of 3.70 indicates room for improvement with regard to this ability. Students showed a relative understanding of the legislative procedures ($M = 3.92$) and the professional pronouncement procedures ($M = 3.83$) to accept a client as an audit client. Lower results were yielded with regard to their perceived ability to apply this understanding when they needed to identify and consider issues related to accepting an engagement. Students demonstrated lower perceived competence levels in the ability to gather ($M = 3.72$) and examine the information obtained ($M = 3.72$) to assess possible significant threats to ethical requirements resulting from undertaking the engagement. This lack of perceived competence further translates into students' feeling that they have a lesser ability to perform the legislative and professional pronouncement procedures required to accept a client, as results indicated mean scores of 3.50 and 3.48 respectively.

7.6.3.3 Establishing the terms of the engagement

In establishing the terms of the engagement after the client had been accepted, students were required to have a thorough understanding of the theoretical aspects pertaining to engagement letters. Even though, at first glance, it appears that students reported a relatively better overall perceived competence level for this competency ($M = 3.85$), their perceived ability to apply the understanding of the theoretical components of engagement letters yielded lower levels of perceived competence. This is clear from students who indicated that they have a fairly good understanding of the content requirements pertaining to engagement letters ($M = 4.02$) and of the circumstances in which a new engagement letter should be issued for existing engagements ($M = 3.99$). Translating this technical understanding into the ability to recognise these circumstances ($M = 3.81$) showed that students felt less competent. A mean of 3.57 was reported for the ability to draft an engagement letter from scratch by using technical knowledge that has been grasped. This supports the notion that, even though they seem to be understanding the requirements in establishing the terms of an engagement, students felt less competent in applying their theoretical understanding in practice.

7.6.3.4 Evaluating and assessing the key risks on the performance of the engagement

This competency measures the students' perceived ability to obtain an understanding of the entity and its environment, including the entity's overall internal control environment, so as to be able to subsequently identify, evaluate and assess the key risks of performing the engagement at both the overall financial statement and assertion level. In general, students seem to be expressing a need for a better competence level ($M = 3.52$). The students indicated that they had a relatively better understanding of the requirement to obtain an understanding of the entity and its environment ($M = 3.93$) and that they had some ability to obtain this understanding by applying these theoretical requirements of what an understanding needs to be obtained about ($M = 3.86$).

Students felt, to some extent, more competent with regard to obtaining this understanding. However, their interpretation of this understanding so as to identify and assess the key risks of performing the engagement at the overall financial statement and assertions levels indicated a clear need for better comprehension. Students seem to have a relatively lower capability of identifying the specific risks (inherent risks and control risks) that could result in material misstatements in the financial statements, at the overall financial statement level, by reporting mean scores between 3.71 and 3.66 respectively. Students' perceived ability to

assess the identified inherent risks ($M = 3.50$) and control risks ($M = 3.48$) at the overall financial statement level yielded lower than ideal mean scores, as did their perceived ability to use this assessment of the specific risks (inherent risks and control risks) to assess the risk of material misstatement (inherent risk x control risk) at the overall financial statement level ($M = 3.57$).

This lack of perceived competence in identifying and assessing the specific risks (inherent risk and control risks) at the overall financial statement level translated to the assertion level risk identification and assessment, showing that students struggled to perform these procedures. This is evident from the fact that students indicated a need, first, for a better ability to identify significant accounts at the assertion level for each significant account balance, class of transactions and disclosure ($M = 3.43$) and, secondly, for the ability to identify the inherent risks at the assertion level for each significant account balance, class of transaction or disclosure ($M = 3.40$).

The students' perceived ability to assess the identified risks at the assertion level showed even lower perceived competence levels than those of identifying the risks at the assertion level. Students indicated that they did not feel competent enough to perform risk assessment procedures such as planning analytical procedures ($M = 3.35$) and to, consequently, assess the inherent risk, the control risk and the risk of material misstatement (inherent risk x control risk) at the assertion level, with means ranging between 3.27, 3.30 and 3.35 respectively. Based on these findings, there is clearly room for improvement in the students' perceived ability to identify, evaluate and assess the key risks of performing the engagement at both the overall financial statement and assertion levels.

These findings are also evident in the students' perceived understanding and competence in identifying and evaluating the risks pertaining to the financial information system of a client, the key internal controls (including IT-related controls) implemented by an entity and the subsequent evaluation of these controls. These competencies are discussed next.

7.6.3.5 Identifying and evaluating the risks pertaining to the financial information system and identifying and documenting the key internal controls (including IT-related controls) implemented in an entity

Students need to obtain an understanding of a variety of factors in the control environment of an entity to be able to, first, identify and evaluate the risks pertaining to the financial information system and then to identify and document the key internal controls. Both these

competencies reported an overall unsatisfactory mean of 3.53, indicating lower levels of understanding and ability of students in performing these tasks.

Students indicated that the teaching methodology currently applied left them with a below-sufficient level of understanding the following:

- The major classes of transactions and balances in the different accounting cycles within an entity ($M = 3.43$);
- The requirements in obtaining an understanding of the internal control environment of the entity, including IT controls ($M = 3.78$); and
- When controls in the internal control environment of the entity will be relevant to the audit ($M = 3.59$).

Moreover, the audit students reported that the manner in which auditing had been taught up to that point at their respective universities did not sufficiently enable them to obtain an understanding of the entity's overall internal control environment ($M = 3.80$) and the IT-controlled environment of the entity ($M = 3.61$). It is further noted that, in obtaining an understanding of the overall control environment, students did not feel sufficiently competent in obtaining an understanding of the entity's:

- Risk assessment process ($M = 3.62$);
- Information system ($M = 3.45$);
- Business processes ($M = 3.46$);
- Communications ($M = 3.27$);
- Financial reporting ($M = 3.52$);
- Control activities ($M = 3.64$); and
- Monitoring of controls ($M = 3.46$).

Finally, it is also clear that these students had a below-adequate perceived ability to identify the internal controls (including IT-related controls) relevant to the audit ($M = 3.44$) and to, consequently, document the internal controls (including IT-related controls) relevant to the audit ($M = 3.21$). This finding became more evident in the results obtained from the question regarding students' perceived ability and understanding of the requirements of evaluating internal control, as discussed next.

7.6.3.6 Evaluating internal control

In evaluating the internal control environment of the entity, the students indicated a lower overall mean competence level of 3.34. This is because students reported a lack of full understanding of the requirements for internal controls needed to design ($M = 3.50$) and to implement ($M = 3.48$) the controls effectively. This translates into the students' lack of perceived competence in understanding, first, the procedures to be performed in evaluating the design ($M = 3.39$) and the implementation ($M = 3.37$) of the internal controls and, secondly, the impact of the design and implementation evaluation on the control risk assessment at the assertion level for each significant account balance, class of transactions and disclosure ($M = 3.37$). The implications that deficiencies identified in the internal controls have for the audit approach at the assertion level for each significant account balance, class of transactions and disclosure, yielded below-competent results ($M = 2.95$), as did the students' perceived ability to evaluate the operating effectiveness of the internal controls by performing tests of the controls ($M = 3.35$).

7.6.3.7 Determining which rules, standards or policies are applicable to the subject matter being evaluated

The purpose of this part of the questionnaire was to ascertain whether students were competent to determine which financial reporting frameworks, such as IFRS, auditing standards, such as the ISAs, and legislative and regulatory requirements, such as the KING III code, were applicable to a specific engagement. The overall mean reported for this competency was 3.17, which is not ideal. Students indicated the same level of perceived competence for the ability to identify which financial reporting framework and which auditing standards were applicable to the subject matter being evaluated ($M = 3.24$). A mean of 3.04 was obtained for the students' perceived ability to identify the applicable legislative and regulatory requirements to which the subject matter, such as financial statements, have to adhere.

7.6.3.8 Developing materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement

This competency determined whether students were able to consider the factors affecting the materiality figure and to calculate this figure as a result. With a relatively low mean of 3.42, it is clear that many students did not feel too competent in performing this task. Although many students felt more competent in the theoretical component of this competency ($M = 3.72$), assessing these factors pointed to a lower perceived ability, with a

mean score of 3.43. Students also indicated room for improvement with regard to their perceived ability to select an appropriate benchmark for calculating materiality ($M = 3.28$) and to, consequently, calculate the planning ($M = 3.26$) and planning performance materiality figures ($M = 3.22$).

7.6.3.9 Designing effective and efficient procedures based on the engagement's scope and the assessed risks

In this part of the questionnaire, students were asked whether the teaching methodology applied in the audit classroom enhanced their understanding and perceived ability to design effective audit procedures based on the engagement scope and the risk assessments performed. The mean of 3.08 is worrisome, as students were examined frequently on this competency at tertiary level. The teaching methodology applied yielded low scores, with students indicating that they did not feel competent to determine, first, the overall audit strategy at the overall financial statement level ($M = 3.22$) and, secondly, the audit strategy for each significant account balance, class of transactions and disclosure at the assertion level ($M = 3.14$). This weakness translates into the competencies of designing effective and efficient audit procedures to address the risks identified for each significant account balance, class of transactions and disclosure at the assertion level ($M = 3.05$), and designing effective and efficient audit plans (audit programs) for each significant account balance, class of transactions and disclosure at the assertion level ($M = 2.92$).

7.6.3.10 Executing the work plan

The lack of opportunities to gain practical experience while at university, as noted from table 7-7 (paragraph 7.3, page 251), is clearly evident in this competency assessment, because students indicated that they did not feel competent in executing the work plan ($M = 2.88$). This came to the fore as students indicated they did not understand the sampling method(s) to be applied while performing the audit procedures ($M = 3.05$). They also indicated that the manner in which auditing had been taught so far did not fully enable them to perform the audit procedures included in the audit programs for each significant account balance, class of transactions and disclosure at the assertion level ($M = 3.19$).

The students further indicated that they did not understand the audit requirements with regard to fraud risks ($M = 3.14$), going concern evaluations ($M = 2.98$), laws and regulations ($M = 2.99$), related party transactions ($M = 3.03$) and subsequent events ($M = 2.94$), as well as the purpose of performing journal entry testing while completing the audit engagement ($M = 2.78$). This perceived lack of understanding is evident in their perceived ability to perform the required procedures for these components, because all means for performing

the procedures on the above topics yielded scores below the ideal understanding level of these students ($M \geq 4$). The mean scores ranged between 2.62 for performing journal entry testing to a maximum mean score of 2.78 which was obtained for performing the required procedures with regard to fraud risks.

7.6.3.11 Documenting the results of procedures performed

The students' perceived ability to document the results of procedures performed was assessed to be low, with a mean score of 3.02, which indicated this ability to be lacking. It was expected that students would struggle to document significant findings or issues that arose during the engagement ($M = 3.08$) due to their lack of practical experience, as seen in the previous competency (paragraph 7.6.3.10, page 287). The lack of practical experience also gave students fewer opportunities to develop competencies such as the ability to document sufficient information to support the nature, timing and extent of the further audit procedures performed and the results of these procedures, which reported means of 3.04 and 3.02 respectively. One major area of concern is the inability of students to document audit differences on the schedule of audit differences ($M = 2.89$), as this competency is related to being competent in the accounting subject which is also studied extensively at tertiary level. The students' perceived lack of skill was also evident in their inability to evaluate the audit evidence obtained and to draw conclusions on this evidence, which is discussed next.

7.6.3.12 Evaluating the evidence and drawing conclusions

The students' perceived inability to execute the work plan (paragraph 7.6.3.10, page 287) and to document the results of the audit procedures performed, as noted previously (paragraph 7.6.3.11, page 288), is evident in their overall lack of ability to, consequently, evaluate the audit evidence obtained and to draw conclusions based on this evidence ($M = 2.89$).

In general, the next step in the audit process, before evaluating the audit evidence obtained and drawing conclusions on this evidence, is to determine the final materiality figure. The students reported a low perceived competence level with regard to identifying factors that have an impact on the final materiality figure calculation ($M = 2.95$), as well as to being able to calculate the final materiality ($M = 3.02$) and the final performance materiality numbers ($M = 2.91$). The students further indicated that they did not have a sufficient understanding of the process in evaluating unadjusted audit misstatements ($M = 2.66$) and, eventually, unadjusted audit misstatements ($M = 2.62$). This perceived inability to evaluate unadjusted audit misstatements is also clear in the students' struggle to distinguish between ($M = 2.71$)

and to determine ($M = 2.60$) whether an unadjusted audit misstatement is material or material and pervasive.

Another major area for concern is that these students seem to be unable to determine whether an unadjusted audit misstatement represents a scope limitation ($M = 2.51$) or a difference with a reporting framework ($M = 2.54$). Students need to be able to do this to determine the impact of the unadjusted audit misstatement evaluation on the audit opinion ($M = 2.73$) and, finally, conclude on the type of audit report to be issued ($M = 3.00$).

Overall, these students reported that they neither had a satisfactory understanding of what sufficient ($M = 3.35$) and appropriate ($M = 3.33$) audit evidence entails nor the ability to conclude on whether sufficient ($M = 3.14$) and appropriate ($M = 3.15$) audit evidence had been obtained. Knowledge of the required information to be included in a management representation letter ($M = 3.00$) and the ability to prepare a management representation letter ($M = 2.78$) were also found to be areas in need of radical improvement. The understanding of the requirements with regard to audit working papers ($M = 3.09$) and the ability to conclude on whether audit working papers were complete and included sufficient and appropriate information ($M = 2.81$) also yielded disappointing results. Finally, these students indicated that they did not feel competent to evaluate whether the financial statements in all material aspects were in line with the applicable financial reporting framework ($M = 3.01$).

7.6.3.13 Drafting the report upon completion of the engagement

Based on the findings in table 7-16 (paragraph 7.6.3, page 279), it is clear that the students in general did not feel competent in drafting the report upon completion of an engagement ($M = 2.80$). This was indicated by the students' perception that the current teaching methodology was not effective in adequately preparing them to identify subsequent events ($M = 2.87$), consider the impact of subsequent events on the audit report ($M = 2.82$) and draft an appropriate audit report in accordance with all the requirements ($M = 2.70$).

In addition to this audit opinion that needs to be reported to stakeholders, various other communications with stakeholders also need to take place before, during and after the audit engagement. The students' perceived ability to understand and perform these tasks is elaborated on in the next paragraph.

7.6.3.14 Preparing information for meetings with stakeholders

Before they could prepare the information for meetings with stakeholders, audit students needed an understanding of the information that should be communicated. They indicated a

higher level of perceived competence in relation to the other requirements of this competency, although still not specifically satisfactory, in understanding the required communications with management ($M = 3.22$), those charged with governance ($M = 3.21$) and other stakeholders ($M = 3.10$). However, it seems that the teaching methodology applied in the classroom did not provide them with enough opportunities to develop the skills to prepare the information required to be discussed, such as recommending improvements for deficiencies identified in the internal controls relevant to the audit ($M = 3.06$) with management ($M = 2.88$), those charged with governance ($M = 2.86$) and other stakeholders ($M = 2.79$). This supports the overall mean ($M = 3.02$) obtained for this competency, which is indicative of a low perceived competence level in the area.

The last competency that relates to auditing and assurance is the required competence levels of students with regard to designing, implementing and managing the quality control systems within an audit firm. This competency is discussed below.

7.6.3.15 Designing, implementing and managing the quality control system in the firm

The overall mean score obtained for this competency was disappointing ($M = 3.04$), because it indicated that students understood neither the importance of quality control in performing engagements ($M = 3.15$) nor the quality control requirements, from an audit firm perspective, in connection with performing an audit ($M = 3.04$). Thus, it seems that students were not sufficiently able to conclude whether all quality control requirements, from an audit firm perspective, had been adhered to during the audit ($M = 2.93$). This result is quite troublesome, as the majority, if not all, of these students would be performing audits in practice after completing their formal education process in the near future.

To summarise, based on the descriptive statistics, students overall felt more competent, although no satisfactory mean scores were reported, in the theoretical aspects of the audit subject than in the application of these aspects in practice, which is needed to be deemed competent in the various competencies that form part of auditing and assurance. This finding confirms those of various researchers such as Barac (2012:48), Steenkamp and Von Wielligh (2011:9), Siegel *et al.* (1997:217) and Adler and Milne (1997b:110-116), as noted in chapter 1 (paragraph 1.1, page 1), who stated that accounting courses still overemphasise the technical substance of the various accounting subjects, more specifically auditing, and do not create adequate scope for the development of the skills required of an audit student. The finding further indicates that the approach followed currently by universities and other higher education institutions still creates a knowledge-to-practice-application barrier, as

discussed in the introduction (paragraph 1.1, page 1), and that this barrier could hinder students in successfully applying themselves when entering the professional audit practice after graduation.

The above finding should serve as a warning sign that this knowledge-to-practice-application barrier needs to be overcome by considering the whole audit teaching-learning environment, together with all the variables affecting it, before any modifications and improvements can be made to the current approach in audit education. The attempt made by the author in this regard was discussed in chapter 6 (page 174), as an audit simulation was developed to intervene and overcome this barrier. The results of the experiment are discussed later in this chapter (paragraph 7.6.5, page 297) after the discussion on the generic and pervasive skill competency levels of the audit students who participated in the experiment, which follows next.

7.6.4 Descriptive statistics on generic and pervasive skill competencies

In this section, the perceived generic and pervasive skill competence level, as reported by the participating students, is discussed. The results were obtained from the pre-test questionnaire completed by both student groups at the two universities partaking in the experiment. Specifically, the results of the competencies related to generic and pervasive skills, as noted in chapter 5 (paragraph 5.4, page 158), are discussed. Table 7-17 indicates the descriptive statistics on these competencies, followed by a discussion of the results of the questions informing these competencies (questions 127-177, annexure A, page 410).

Table 7-17: Descriptive statistics on generic and pervasive skill competencies

Dependent variable (competencies)	N	Mean	Std Deviation
Ethical behaviour and professionalism	530*	4.10	.757
Personal attributes	530*	3.87	.830
Professional skills	530*	3.54	.794

*One student did not complete this portion of the pre-test questionnaire

7.6.4.1 Ethical behaviour and professionalism

The overall mean score of 4.10 should bring some sigh of relief, in light of the current issues in audit education as highlighted throughout this thesis. As noted in chapter 5 (paragraph 5.4.1, page 159), SAICA (2010:20) stated that not only recently qualified CAs, but also

experienced individuals in the profession, should uphold ethical principles and conduct all tasks professionally. They further noted that it is fundamental to act with integrity because this is essential to the profession's commitment to excellence and the protection of public interest (SAICA, 2010:20). The perceived competence levels of the students of University X and University Y with regard to the ethical behaviour and professionalism that CAs are required to display in practice, as mentioned in chapter 5 (paragraph 5.4.1, page 159), were also assessed in the questionnaire (questions 127-136, annexure A, page 410). Table 7-18 next illustrates the perceived competence levels of these students in this particular competency.

Table 7-18: Descriptive statistics on ethical behaviour and professionalism

Questions (127-136, annexure A, page 409)	N	Mean	Std Deviation
The manner in which auditing was taught (the teaching methodology) up to now enhanced my ability to demonstrate the following skills:			
Protection of public interest	530*	3.50	1.11
Acting competently with honesty and integrity	530*	4.13	.890
Carrying out work with a desire to exercise due care	530*	4.07	.905
Maintaining objectivity	530*	4.13	.888
Maintaining independence	530*	4.20	.841
Avoiding conflict of interest	530*	4.23	.840
Protecting the confidentiality of information	530*	4.28	.830
Maintaining the profession's reputation	530*	4.22	.866
Enhancing the profession's reputation	530*	4.15	.887
Adhering to the rules of professional conduct	530*	4.13	9.12

*One student did not complete this portion of the pre-test questionnaire

The results in table 7-18 show that students felt that University X and University Y were applying teaching methodologies that were, to a great extent, assisting them to demonstrate the skills needed to act ethically and professionally. This could be ascribed to the fact that ethical requirements such as the SAICA CPC needs to be incorporated into the curriculum, as noted in chapter 5 (paragraph 5.3, page 142).

As mentioned earlier, this brings an element of reassurance that the current teaching methodology in the audit classroom will result in students' entering practice with integrity, honesty and objectivity in performing their work ($M = 4.13$). Furthermore, these students should be able to:

- Maintain their independence ($M = 4.20$);

- Avoid conflicts of interest ($M = 4.23$); and
- Protect the confidential information of clients that they will have access to ($M = 4.28$).

It is also comforting that these students felt they were able to maintain and enhance the profession's reputation, with mean scores of 4.22 and 4.15. This aspect has been under question in recent years due to financial scandals in which auditors have been implicated, as noted in chapter 5 (paragraph 5.4.1, page 159).

The students' perceived ability to adhere to the rules of professional conduct ($M = 4.13$) also supported the fact that they would be able to perform their audit duties in practice both ethically and professionally. The lowest mean score of 3.50 for protection of public interest, as seen in table 7- 18 earlier, identifies an area that universities should improve on, together with the personal attribute competency, which is discussed in more detail next.

7.6.4.2 Personal attributes

As noted in chapter 5 (paragraph 5.4.2, page 164), once qualified as a CA, one is expected to have developed a number of personal qualities that inform professional conduct in audit practice. Table 7-19 that follows demonstrates the results of the various questions in the pre-test (questions 137-147, annexure A, page 409) which measured this competency level.

Table 7-19: Descriptive statistics on personal attributes

Questions (137-147, annexure A, page 410)	N	Mean	Std Deviation
The manner in which auditing was taught (the teaching methodology) up to now enhanced my ability to demonstrate the following skills:			
Self-management	530*	3.87	1.018
Demonstrating leadership	530*	3.78	1.029
Demonstrating initiative	530*	3.75	.991
Maintaining competence	530*	3.96	.952
Demonstrating competence	530*	3.91	.974
Striving to add value in an innovative manner	530*	3.75	1.019
Managing change	530*	3.73	1.061
Treating others in a professional manner	530*	4.07	.947
Being a life-long learner	530*	3.98	.994
Working effectively as a team member	530*	3.96	.967
Managing time effectively	530*	3.86	1.026

*One student did not complete this portion of the pre-test questionnaire

The lower overall mean score for this competency ($M = 3.87$) is below the relatively high mean score ($M = 4.10$) which was obtained for ethical behaviour and professionalism, as noted in table 7-17 (paragraph 7.6.4, page 291). This points to the students' perception that the teaching methodology at their respective universities enabled them, to a lesser extent, to demonstrate the competence level required from a CA after graduation in this specific area. The finding that students feel that universities, to an extent, enables them to demonstrate ($M = 3.91$) and maintain ($M = 3.96$) competence in general is surprising and in some circumstances in contrast with the results obtained for the competency levels in auditing and assurance (paragraph 7.6.3, page 279). This could indicate that, first, students did not have a clear view of the expectations to be deemed competent in this field and, secondly, that these expectations should have been communicated to students more clearly.

Despite this finding, it seems that the universities did enable students to learn and demonstrate skills of self-management ($M = 3.87$) and time management ($M = 3.86$), although not to a satisfactory extent. Findings for other areas, such as the ability to demonstrate leadership and initiative and the ability to manage change, also indicated that universities can do more to enable students to demonstrate these skills, with perceived mean scores ranging between 3.73 and 3.78. In addition, students felt they were not particularly motivated to add value in an innovative manner ($M = 3.75$), but that the teaching methodology did, to some extent, enable them to become life-long learners ($M = 3.98$) and work effectively as a team member ($M = 3.96$).

The results of the professional skills that audit students need to demonstrate, as described in chapter 5 (paragraph 5.4.3, page 168), are discussed next.

7.6.4.3 Professional skills

Table 7-17 (paragraph 7.6.4, page 291) showed that students felt there was room for improvement in the methodologies applied at their universities to enable them to demonstrate the required professional skills ($M = 3.54$). Table 7-20 includes the results of students' views on whether the teaching methodology at their universities enabled them to demonstrate a variety of professional skills, as required by SAICA (paragraph 5.4.3, page 168). The overall mean score obtained for this competency ($M = 3.54$) is well below the other two generic and pervasive skill competencies which were discussed earlier (paragraph 7.6.4.1 to 7.6.4.2, page 291 to 293). This finding serves as a warning sign to University X and University Y that their current teaching methods have not been perceived to be sufficient in enhancing the ability of audit students to demonstrate the variety of professional skills required in practice.

Table 7-20: Descriptive statistics on professional skills

Questions (148-177, annexure A, page 410)	N	Mean	Std Deviation
The manner in which auditing was taught (the teaching methodology) up to now enhanced my ability to demonstrate the following skills:			
Gathering information	530*	3.85	.934
Developing an understanding of the operating environment of an entity	530*	3.77	.942
Identifying the needs of internal or external clients	530*	3.65	.958
Developing a plan to meet the identified needs	530*	3.54	.999
Analysing information or ideas	530*	3.64	.968
Performing complex computations	530*	3.37	1.068
Verifying information	530*	3.77	.984
Validating information	530*	3.70	.986
Integrating ideas from various sources	530*	3.57	.966
Integrating information from various sources	530*	3.58	.973
Drawing conclusions	530*	3.69	.962
Forming opinions	530*	3.73	.952
Identifying problems or issues	530*	3.78	.949
Developing solutions for identified problems	530*	3.68	.963
Providing advice	530*	3.64	.953
Sharing information through written discussion	530*	3.56	.992
Sharing information through oral discussion	530*	3.54	1.036
Preparing documents	530*	3.33	1.060
Presenting information effectively	530*	3.40	1.048
Planning projects	530*	3.38	1.070
Managing projects	530*	3.40	1.091
Identifying the need for internal expertise	530*	3.51	1.030
Identifying the need for external expertise	530*	3.57	1.024
Facilitating decision making	530*	3.48	1.054
Leading effective meetings	530*	3.35	1.090
Supervising others	530*	3.39	1.101
Understanding the impact of IT on a CA(SA)'s daily functions and routines	530*	3.61	1.088
Considering basic legal concepts	530*	3.48	1.056
Understanding the national environment	530*	3.21	1.125
Understanding the international environment	530*	3.18	1.092

*One student did not complete this portion of the pre-test questionnaire

Table 7-20 clearly indicates room for improvement in University X and University Y with regard to the professional skill requirements of their audit students. Some skills such as gathering information; developing an understanding of the operating environment of an entity; verifying and validating information; forming opinions; and identifying problems or issues, were identified as skills with which students felt more competent than in relation to the others, with mean scores ranging between 3.70 and 3.85.

Other areas which indicated below-satisfactory mean scores are those pertaining to skills such as identifying the needs of internal or external clients; developing a plan to meet the identified needs; analysing information or ideas; integrating ideas and information from various sources; drawing conclusions; developing solutions for identified problems; and providing advice to clients. The skills of sharing information through written and oral discussion and identifying the need for internal and external expertise also obtained mean scores ranging between 3.51 and 3.69, indicating that students did not feel confident that they would be able to demonstrate these skills in practice. Furthermore, the students indicated that they did not have a thorough understanding of the impact of IT on a CA(SA)'s daily functions and routines ($M = 3.61$). The professional skills that obtained the lowest mean scores include the students' perceived ability to understand the national ($M = 3.21$) and international ($M = 3.18$) environment in general.

More worrisome statistics are those related to project and team management. The students indicated that their perceived competence level in the following areas had not been developed to such a point that they would feel competent in applying these skills upon entering audit practice after graduation:

- Planning projects ($M = 3.38$);
- Managing projects ($M = 3.40$);
- Leading effective meetings ($M = 3.35$) and;
- Supervising others ($M = 3.39$).

The same could be said for students' perceived lack of ability to prepare documents ($M = 3.33$) and present information effectively ($M = 3.40$). Although it would seem easier to develop these competencies in public practice after graduation, these competencies form part of the SAICA competency framework, and universities presenting the CA programme should put more effort into providing ample opportunity to develop these skills.

From these findings with regard to generic and pervasive skills, it can be concluded that more should be done to develop these soft skills in students to enable them to function successfully in audit practice. This conclusion is in line with the findings of Valadas *et al.* (2010:262-263), as noted in chapter 1 (paragraph 1.1.3, page 7), which showed that the current methodology to develop the audit student into a successful entry-level professional auditor, who will be able to embrace the difficult challenges set in practice, needs definite improvement. This finding also confirms the call for change in the approach of teaching auditing made by the accounting profession, as stated in chapter 1 (paragraph 1.1.3, page 7). Again, emphasis is placed on the fact that not only the essential technical knowledge should be present, but also a number of generic and pervasive skills that will enhance the accounting students' ability to be hired and to apply themselves in public practice (Saunders & Machell, 2000:290-298; Tan *et al.*, 2004:51-53) as this is where these skills are essential (De Lange *et al.*, 2006:365-370).

In summary, from the descriptive statistics on auditing and assurance (paragraph 7.6.2, page 274) and generic and pervasive skills (paragraph 7.6.4, page 291) discussed earlier, it can be concluded that the approach followed in audit education today to prepare students for the actual auditing environment still requires change. This finding confirms the author's argument made in the problem statement (paragraph 1.3, page 15). Change will answer the auditing profession's call for students to be actively involved in the process of developing the necessary skills and knowledge to be able to conduct an audit in terms of the ISAs (Fowler, 2005:41).

The effect of the instrument developed by the author which will aid in facilitating this change, as explained in chapter 6 (page 174), is discussed in the paragraphs to follow. A conclusion is then drawn on whether this newly developed instrument (i.e. audit simulation) would assist in the process of enhancing the perceived broad competence of audit students (paragraph 7.6.5 to 7.6.7).

7.6.5 T-test for the effect of the simulation project on perceived broad competence

As stated earlier in this chapter (paragraph 7.2, page 249), a quasi-experimental (pre-test/post-test) design was followed to quantitatively determine whether the newly developed audit simulation had any effect on the audit students' perceived broad competence. The following steps were taken as part of the quantitative quasi-experimental (pre-test/post-test) research design:

- Testing differences between the mean scores of University X and University Y for the pre-test (paragraph 7.6.5.1, page 298) (step 1);
- Testing the movement in mean scores between the pre-test and post-test for both University X and University Y (paragraph 7.6.5.2, page 300) (step 2); and
- Testing differences between the mean scores of University X and University Y for the post-test (paragraph 7.6.5.3, page 305) (step 3).

7.6.5.1 Testing differences between the mean scores of University X and University Y for the pre-test (step 1)

Before testing whether the simulation project had any effect on and improved the audit students' perceived broad competence, an independent samples t-test was performed. This test determined whether there were any statically and practically significant differences between the mean scores of the students of University X and University Y so as to ensure that the pre-test results could be compared to the post-test results (Jamieson, 2004:277).

Levene's test was also performed. In cases where the assumption of homogeneity of variances was violated ($\text{Sig} \leq 0.05$), the Sig values, which compensate for the violation, were reported, as proposed by Pallant (2013:250). Because of the non-random sample used in this study, the results of all the independent samples t-tests performed in this section were interpreted based on effect sizes (d), indicating practical significance (Van der Merwe, 2013:98), instead of the Sig (p) values, indicating statistical significance, which are disclosed for completeness purposes only.

As noted earlier (paragraph 7.6.1, page 266), Ellis and Steyn (2003:52) suggested that d should be calculated as the mean difference divided by the maximum standard deviation of the two groups that are compared (University X and University Y), and that the effect size of d should be interpreted as:

- Small where $d = 0.2$;
- Medium where $d = 0.5$; and
- Large effect where $d \geq 0.8$.

Table 7-21: Testing differences between the means of University X¹ and University Y² for the pre-test

Dependent variable (competencies)	Mean per University		Sig	T-tests		
				t Value	p Value	d Value
Analyses, evaluates and advises on assurance needs	X	3.10	.017	-1.26	.207	.10
	Y	3.18				
Identifies and considers issues related to accepting an engagement	X	3.67	.995	-.97	.331	.08
	Y	3.73				
Establishes the terms of the engagement	X	3.99	.264	4.94	.000	.42
	Y	3.65				
Evaluates and assesses the key risks on the performance of the engagement	X	3.52	.099	.4	.969	.00
	Y	3.52				
Determines which rules, standards or policies are to apply to the subject matter being evaluated	X	3.15	.708	-.70	.484	.06
	Y	3.20				
Develops materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement	X	3.43	.675	.24	.809	.02
	Y	3.41				
Designs effective and efficient procedures based on the engagement's scope and the assessed risks	X	3.15	.631	2.35	.019	.20
	Y	2.98				
Executes the work plan	X	3.07	.617	6.32	.000	.55
	Y	2.62				
Documents the results of procedures performed	X	3.15	.710	4.12	.000	.36
	Y	2.83				
Evaluates the evidence and draws conclusions	X	3.05	.671	5.55	.000	.48
	Y	2.67				
Drafts the report upon completion of the engagement	X	2.95	.092	4.49	.000	.38
	Y	2.58				
Prepares information for meetings with stakeholders	X	3.15	.983	4.31	.000	.38
	Y	2.82				
Identifies and evaluates the risks pertaining to the financial information system	X	3.55	.278	.33	.743	.03
	Y	3.52				
Identifies and documents the key internal controls (including IT-related controls) implemented in an entity	X	3.59	.249	2.65	.008	.23
	Y	3.43				

Table 7-21: Testing differences between the means of University X¹ and University Y² for the pre-test (continued)

Dependent variable (competencies)	Mean per University		Sig	T-tests		
				<i>t</i> Value	<i>p</i> Value	<i>d</i> Value
Evaluates internal control	X	3.36	.557	.70	.485	.06
	Y	3.32				
Designs, implements and manages the quality control system in the firm	X	3.15	.444	3.43	.001	.29
	Y	2.88				
Ethical behaviour and professionalism	X	4.19	.351	3.30	.001	.27
	Y	3.98				
Personal attributes	X	4.03	.016	5.26	.000	.44
	Y	3.65				
Professional skills	X	3.69	.509	4.97	.000	.41
	Y	3.35				

¹ University X (completed pre-test, experiment and post-test)

² University Y (completed pre-test and post-test)

From table 7-21, it is noted that the majority of the competencies reported statistical significant differences ($p \leq 0.05$), assuming random sampling (Pallant, 2013:250), between the mean scores of University X and University Y. These competencies also reported effect sizes (*d*) that ranged between 0.55 and 0.02, which indicate a medium to small practical effect on the mean scores differences between University X and University Y. Before the post-test results of the two universities were compared, these differences were accounted for by performing an analysis of the covariance (ANCOVA), which corrects for any differences in the mean scores of the two groups in the pre-test mean scores (Jamieson, 2004:277). By doing so, the author ensured that the post-test results could be compared between the two universities (Jamieson, 2004:277) and, consequently, determined whether the simulation project had any effect on audit students' perceived broad competence (paragraph 7.6.5.3, page 305). The latter is discussed after explaining the movement in mean scores between the pre-test and post-test for both University X and University Y.

7.6.5.2 Testing the movement in mean scores between the pre-test and post-test for both University X and University Y (step 2)

The next few paragraphs describe the movement in the mean scores between the pre-test and post-test for both University X and University Y. A paired sample t-test was performed,

measuring the movement in mean scores between the pre-test and post-test by taking into account only those students who completed both the pre-test and post-test questionnaires.

The results of the one question in the questionnaire (question 7) which was not subject to factor analysis will be discussed first, followed by the competencies supported and informed by the subject content and audit process related to auditing and assurance (paragraph 5.3, page 142) and generic and pervasive skills (paragraph 5.4, page 158). Yet again, because of the non-random sample, the results of all the paired sample t-tests were interpreted based on effect sizes (d), indicating practical significance (Van der Merwe, 2013:98), instead of the Sig (p) values, indicating statistical significance, which are disclosed for completeness purposes only. As noted earlier (paragraph 7.6.1, page 266), Ellis and Steyn (2003:52) suggested that d should be calculated as the mean difference divided by the maximum standard deviation of the two groups that are compared (pre-test and post-test mean scores), and that the effect size of d should be interpreted as small, where $d = 0.2$, medium where $d = 0.5$ and large (significant) where $d \geq 0.8$ which is also practically significant. Tables 7-22 and 7-23 that follow summarise the movement in the mean scores between the pre-test and post-test for both universities and for each of the competencies.

Table 7-22: Movement in mean scores between the pre-test and post-test for University X

Dependent variable (competencies)	Test	Mean	N	Std. Deviation	p Value	d Value
Question 7: The audit process as a whole	Pre	3.63	279	.845	.000	0.52
	Post	4.08	279	.781		
Analyses, evaluates and advises on assurance needs	Pre	3.08	279	.743	.000	0.94
	Post	3.78	279	.810		
Identifies and considers issues related to accepting an engagement	Pre	3.67	279	.726	.000	0.46
	Post	4.01	279	.725		
Establishes the terms of the engagement	Pre	3.99	279	.765	.001	0.23
	Post	4.17	279	.760		
Evaluates and assesses the key risks on the performance of the engagement	Pre	3.50	279	.739	.000	0.66
	Post	3.99	279	.725		

Table 7-22: Movement in mean scores between the pre-test and post-test for University X (continued)

Dependent variable (competencies)	Test	Mean	N	Std. Deviation	p Value	d Value
Determines which rules, standards or policies are to apply to the subject matter being evaluated	Pre	3.11	279	.854	.000	0.98
	Post	3.94	279	.801		
Develops materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement	Pre	3.41	279	.815	.000	0.70
	Post	3.98	279	.798		
Designs effective and efficient procedures based on the engagement's scope and the assessed risks	Pre	3.12	279	.820	.000	0.92
	Post	3.88	279	.799		
Executes the work plan	Pre	3.03	279	.769	.000	1.13
	Post	3.90	279	.788		
Documents the results of procedures performed	Pre	3.12	279	.874	.000	1.00
	Post	3.99	279	.805		
Evaluates the evidence and draws conclusions	Pre	3.01	279	.767	.000	1.18
	Post	3.92	279	.768		
Drafts the report upon completion of the engagement	Pre	2.91	279	.862	.000	1.15
	Post	3.90	279	.890		
Prepares information for meetings with stakeholders	Pre	3.12	279	.852	.000	1.03
	Post	4.00	279	.804		
Identifies and evaluates the risks pertaining to the financial information system	Pre	3.54	279	.821	.000	0.61
	Post	4.04	279	.741		
Identifies and documents the key internal controls (including IT-related controls) implemented in an entity	Pre	3.57	279	.714	.000	0.63
	Post	4.02	279	.736		
Evaluates internal control	Pre	3.35	279	.730	.000	0.77
	Post	3.91	279	.746		
Designs, implements and manages the quality control system in the firm	Pre	3.11	279	.850	.000	0.93
	Post	3.90	279	.822		
Ethical behaviour and professionalism	Pre	4.18	278	.715	.003	0.21
	Post	4.33	278	.749		
Personal attributes	Pre	4.02	278	.762	.000	0.41
	Post	4.33	278	.727		
Professional skills	Pre	3.67	278	.741	.000	0.73
	Post	4.22	278	.736		

From table 7-22, it is noted that the students of University X indicated a statistically significant increase ($p \leq 0.05$), as well as a medium practical significant increase (d), with $d = 0.52$, in the students' understanding of the audit process as a whole after they participated in the newly developed audit simulation. It is further clear that all the competencies indicated a statistically significant increase ($p \leq 0.05$) in the perceived competence level of the students after they participated in the newly developed audit simulation. Furthermore, the perceived competence level of the students after completion of the audit simulation also practically significantly increased for almost half of the competencies ($d \geq 0.8$), with some competencies indicating a medium to small practical significant increase in the perceived competence levels, with effect sizes ranging between $d = 0.21$ to $d = 1.18$.

Based on these findings, it can be concluded that the students' perceived competence levels statistically significantly increased, and almost half (nine) of the competencies, practically significantly increased from before to after the audit simulation. Only three out of the 19 competencies showed a close to small increase in perceived competence level. The movement in mean scores between the pre-test and post-test for University Y is discussed next.

Table 7-23: Movement in mean scores between the pre-test and post-test for University Y

Dependent variable (competencies)	Test	Mean	N	Std. Deviation	<i>p</i> Value	<i>d</i> Value
Question 7: The audit process as a whole	Pre	3.53	133	.754	.007	0.18
	Post	3.67	133	.756		
Analyses, evaluates and advises on assurance needs	Pre	3.20	133	.509	.025	0.24
	Post	3.32	133	.621		
Identifies and considers issues related to accepting an engagement	Pre	3.72	133	.713	.322	0.08
	Post	3.66	133	.669		
Establishes the terms of the engagement	Pre	3.63	133	.793	.777	0.02
	Post	3.61	133	.719		
Evaluates and assesses the key risks on the performance of the engagement	Pre	3.55	133	.598	.032	0.21
	Post	3.67	133	.630		
Determines which rules, standards or policies are to apply to the subject matter being evaluated	Pre	3.20	133	.783	.221	0.13
	Post	3.30	133	.846		

Table 7-23: Movement in mean scores between the pre-test and post-test for University Y (continued)

Dependent variable (competencies)	Test	Mean	N	Std. Deviation	p Value	d Value
Develops materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement	Pre	3.42	133	.725	.000	0.55
	Post	3.82	133	.748		
Designs effective and efficient procedures based on the engagement's scope and the assessed risks	Pre	2.97	133	.785	.055	0.20
	Post	3.13	133	.790		
Executes the work plan	Pre	2.60	133	.734	.000	0.82
	Post	3.20	133	.639		
Documents the results of procedures performed	Pre	2.82	133	.833	.000	0.38
	Post	3.14	133	.828		
Evaluates the evidence and draws conclusions	Pre	2.64	133	.698	.000	0.78
	Post	3.18	133	.655		
Drafts the report upon completion of the engagement	Pre	2.58	133	.892	.000	0.52
	Post	3.05	133	.779		
Prepares information for meetings with stakeholders	Pre	2.81	133	.725	.000	0.43
	Post	3.12	133	.765		
Identifies and evaluates the risks pertaining to the financial information system	Pre	3.55	133	.809	.233	0.13
	Post	3.65	133	.873		
Identifies and documents the key internal controls (including IT-related controls) implemented in an entity	Pre	3.46	133	.589	.834	0.02
	Post	3.48	133	.638		
Evaluates internal control	Pre	3.37	133	.567	.705	0.04
	Post	3.39	133	.688		
Designs, implements and manages the quality control system in the firm	Pre	2.84	133	.842	.000	0.41
	Post	3.19	133	.775		
Ethical behaviour and professionalism	Pre	4.04	133	.699	.273	0.11
	Post	3.97	133	.687		
Personal attributes	Pre	3.80	133	.741	.710	0.03
	Post	3.78	133	.743		
Professional skills	Pre	3.42	133	.677	.892	0.01
	Post	3.43	133	.664		

Table 7-23 shows that the students of University Y indicated a statistically significance increase ($p \leq 0.05$) in their understanding of the audit process as a whole after they continued with normal lectures during the experimental period. Although this increase is statistically significant, the effect size (d) was small, with $d = 0.18$. Moreover, only 10 out of the 19 competencies indicated a statistically significant increase ($p \leq 0.05$) in the perceived competence level, and from these only four competencies indicated a medium to practically significant (d) increase in the perceived competence levels, with effect sizes ranging between $d = 0.52$ and $d = 0.82$. Although all the other competencies indicated an increase in the perceived competence level, none of these were statistically or practically significant. Based on these findings, it can be concluded that the students' perceived competence levels did, in some instances, statistically significantly increased, with only one practically significant increase noted with regard to attending the normal lectures during the experimental period.

After the movement was investigated in mean scores between the pre-test and post-test for both University X and University Y, the differences were determined between the mean scores of University X and University Y for the post-test. This would, ultimately, indicate whether the simulation project had any effect on audit students' perceived broad competence.

7.6.5.3 Testing differences between the mean scores of University X and University Y for the post-test (step 3)

In testing the differences between the mean scores of University X and University Y for the post-test, the author could determine, first, whether the simulation project had any effect on audit students' perceived broad competence and, secondly, whether the audit simulation had a greater effect on the audit students' perceived broad competence than had they simply attended normal lectures (passive approach) in the audit subject. An independent samples t-test was performed between the adjusted mean scores from the post-test, after mean scores obtained in the post-test were corrected for any differences in the pre-test mean scores between of University X and University Y using the ANCOVA (paragraph 7.6.5.1, page 298).

Table 7-24 illustrates the results of the independent samples t-test between the adjusted mean scores from the post-test after these were corrected for any differences in the pre-test mean scores between University X and University Y.

Table 7-24: Testing differences between the mean scores of University X and University Y for the post-test

Dependent variable (competencies)	Adjusted Means		Mean Square	p Value	d Value
	X ¹	Y ²			
Question 7: The audit process as a whole	4.07	3.69	0.540	.000	0.51
Analyses, evaluates and advises on assurance needs	3.79	3.29	0.465	.000	0.75
Identifies and considers issues related to accepting an engagement	4.01	3.65	0.432	.000	0.55
Establishes the terms of the engagement	4.12	3.71	0.462	.000	0.61
Evaluates and assesses the key risks on the performance of the engagement	3.99	3.66	0.398	.000	0.53
Determines which rules, standards or policies are to apply to the subject matter being evaluated	3.95	3.28	0.608	.000	0.86
Develops materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement	3.98	3.82	0.532	.040	0.22
Designs effective and efficient procedures based on the engagement's scope and the assessed risks	3.86	3.16	0.581	.000	0.93
Executes the work plan	3.86	3.29	0.500	.000	0.80
Documents the results of procedures performed	3.97	3.19	0.616	.000	0.99
Evaluates the evidence and draws conclusions	3.88	3.26	0.486	.000	0.88
Drafts the report upon completion of the engagement	3.87	3.10	0.695	.000	0.93
Prepares information for meetings with stakeholders	3.98	3.17	0.602	.000	1.05
Identifies and evaluates the risks pertaining to the financial information system	4.04	3.65	0.551	.000	0.52
Identifies and documents the key internal controls (including IT-related controls) implemented in an entity	4.01	3.51	0.422	.000	0.77
Evaluates internal control	3.91	3.39	0.454	.000	0.78
Designs, implements and manages the quality control system in the firm	3.87	3.25	0.573	.000	0.83
Ethical behaviour and professionalism	4.31	4.00	0.460	.000	0.45
Personal attributes	4.31	3.83	0.467	.000	0.71
Professional skills	4.19	3.49	0.455	.000	1.04

¹ University X (completed pre-test, experiment and post-test)² University Y (completed pre-test and post-test)

Yet again, because of the non-random sample of the respondents, the results of the independent samples t-test were interpreted based on effect sizes (d), indicating practical significance (Van der Merwe, 2013:98), instead of the Sig (p) values, indicating statistical significance, which are disclosed for completeness purposes only. Furthermore, d is calculated as the mean difference divided by the maximum standard deviation of the two groups that are compared (University X and University Y), and the effect size of d is interpreted as small, where $d = 0.2$, medium where $d = 0.5$ and large (significant) where $d \geq 0.8$ as noted earlier (paragraph 7.6.1, page 266) (Ellis & Steyn, 2003:52).

From table 7-24, the following is noted:

- A statistically significant difference exists ($p \leq 0.05$) between the adjusted mean scores of University X and University Y for the students' understanding of the audit process as a whole, as well as for all the competencies tested in this study; and
- All the competencies, except for two, indicated a medium to practically significant difference in the adjusted mean scores of University X and University Y, with d ranging between 0.52 and 1.05. These competencies that did not indicate a medium to practically significant difference is the development of materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement ($d = 0.22$) and ethical behaviour and professionalism ($d = 0.45$). The difference between the adjusted mean scores of University X and University Y regarding an understanding of the whole audit process also indicated a medium practically significant difference, with $d = 0.51$.

Based on these findings, the conclusion can be drawn that the newly developed audit simulation had a greater effect on the audit students' perceived broad competence (i.e. auditing and assurance and generic and pervasive skills) and their understanding of the audit process as a whole (i.e. increasing their perceived broad competence), in relation to just attending normal lectures in the audit subject. This finding supports those of researchers such as Steenkamp and Rudman (2007:23), Hosal-Akman and Simga-Mugan (2010:251), and Steenkamp and Von Wielligh (2011:9), as stated in chapter 6 (paragraph 6.2, page 179), who claimed that courses in accounting degrees frequently apply out-dated methods and follow a passive learning approach.

The above finding further confirms the argument by Siegel *et al.* (1997:218) that a passive technique of conveying auditing theory to untried young auditors results in poor achievement when their audit knowledge is examined (paragraph 6.2, page 179). This provides support to

the problem statement of this study, as noted in chapter 1 (paragraph 1.3, page 15), namely that the current approach in preparing audit students at higher education level for the actual auditing environment still requires change. As seen from the findings of the study, the students taught by a passive approach still indicated a lower perceived competence level than those who took part in the audit simulation which actively involving them in the learning process. Hence, the implementation of simulations, such as the one developed and tested in this study, could assist in bringing the required change to the audit classroom and audit education in general.

The results of the focus group discussions informing the quantitative findings are discussed next.

7.6.6 Results of focus group discussions

This section discusses the themes that emerged as students provided the main reasons and motivations for feeling more competent in auditing and assurance and the generic and pervasive skills competencies, following the completion of the newly developed audit simulation. The data were obtained, as noted earlier (paragraph 7.5.1, page 256), by posing the following question to the students at each focus group discussion. This question probed the students to provide reasons for their perceived increase in broad competence shown in the statistical analysis (paragraph 7.6.5, page 297):

Why do you think the audit simulation assisted you to better comprehend the audit subject?

Some of the individual noteworthy quotes, as stated by the participants in the focus group discussions, are given below. The themes were identified from content analysis (see paragraph 7.5, page 256). The themes are not discussed in any particular order and some of the quotes are interrelated.

7.6.6.1 Obtaining a holistic view of the audit process

One of the most prominent reasons that students raised was that the audit simulation gave them the opportunity to obtain a better understanding of the audit process as a whole, because they could see how the theory fit into the various steps in the audit process. Some comments included:

"I personally had a better understanding of how the whole audit process works. Before the audit simulation, you learn about pre-engagement activities and about the

audit report at the end of the audit, but I did not really have an understanding of all that stuff together. So it helped me a lot.”

“I think what also helped is the fact that you could do the audit from the beginning to the end, as to where you had class you just did a fraction of the work at a time.”

“I think the more practical something is, the more easier it is for you to understand rather than the theory because the theory has a whole lot of scope that you need to cover but when you see it and you get to follow it through the whole process, you get to see oh, this is what it actually means.”

“It helps you to visualise the whole thing from beginning to end and not just the theoretical aspects we learn.”

“I think that the simulation – uhm – put the pieces of the puzzle together in terms of the whole how each section is linked to another.”

7.6.6.2 Sufficient communication

The students indicated that the use of Facebook, as a platform for communication, assisted in their learning process. They felt it was an effective method of communication between themselves and the lecturer due to the fact that they could see other students' questions and the answers that followed. The students stated:

“You do not actually realise how many of these groups actually have the same question. It was really interesting to me to see, for example, when we sat and wondered about one thing, and two days later, a different group asked the same question and then you answered it on the Facebook page.”

“Everybody could see what the answer is to the questions posted; I really liked it and I was on that page regularly.”

It also served as an effective method of communication outside the audit classroom:

“For me it was a great source of communication because when I wanted to know about something, I did not have to send an email to hear about it, because I will first look if someone else has not already asked. And then it makes it easier than sending unnecessary emails.”

7.6.6.3 Being actively involved in the learning process

The simulation proved to be a tool that actively involved the students in the learning process. In this way, they could see how an audit is actually performed and how the theory should be applied in a scenario. This is evident by comments such as:

“I think it’s how the audit procedures actually begins, as vacation work also helped but here you could have seen better how it was actually going to be applied, and not just rote learn it.”

“I think the planning part of the audit was pretty cool to like see all the theory that we have already done, and how the whole planning process fits together by doing it step by step. It helps you to see what auditors really do.”

“It’s one thing to learn theory from a textbook, but it’s another thing to see how you should take the information given to you and complete a working paper that should form part of the audit in total.”

It further enhanced the students’ understanding and memory retention:

“Okay, I think overall, just the whole practical aspect of the whole thing, as we are currently only just learning theory, theory, theory, but now we all basically know how it is practically applied and this helps a lot. I learn when I do something practically; I remember it more easily than just learning the theory.”

“See, for me it was great. I got the creditors section and I really now know and understand the whole creditors process and where everything fits in.”

“I think with the working papers – it would be easier to remember something, or click a certain topic – you’ll actually click better ‘cause you’ll literally see what the working papers looks like and you’ll easier remember what is on that working paper, which kind of flows back to the theory that you studied.”

“I have to say, just to put everything in perspective – it helped me a lot. It’s not that I am ready to go to a company and audit it now, but it helped me to have a better understanding of everything. I think in future papers if you get a question where you are not sure what the answer is, it will be easier to rationalise the issue and come up with an answer, even if you have to thumb-suck it.”

7.6.6.4 Working as part of a group

The fact that the students were required to work in groups proved to be an effective method of teaching which enhanced their learning. The students noted that, if they did not understand something, their peers were there to assist them, and vice versa, for example:

“The teamwork really worked well for me. If you did not know something, you just said, come and help here quick, and then when they did not know something, you go and help them.”

“If one person struggled with something, another person immediately helped that person. Although you had certain tasks allocated to you, when you struggled someone was there to quickly assist you. It was nice to see how we can help each other.”

Their peers explained at a more understandable level and from a different perspective:

“To hear how someone else thinks about something, I really think helped me.”

“To discuss in the group made more sense than a lecturer trying to explain it to you where students in the same position as you – you ask them a question ‘cause you’re not sure, then the whole group starts talking about it. They understand what your question is, more so than the lecturers. So they explain it to you on your level so that you understand it better than sitting in class answering a question – it’s a textbook answer, where a student knows what the textbook answer is, but they see it this way and maybe you understand it better.”

“When you sometimes do not understand something or when the lecturer explains something that you do not click, but the persons next to you understands it, you can just say, quickly explain this to me, then the person says ok, because he understands it and explains it, I can almost say, at a student level which makes more sense.”

7.6.6.5 Visualising theory in practice

The use of actual visual aids was shown to have contributed to the students’ enhanced perceived competence in the audit subject. These aids included actual audit working papers and engagement letters, which gave students the opportunity to see how the audit theory is applied in practice. It also made the work interesting and understandable. For example:

“I completed the engagement letter, and to see the physical thing, who should sign, who is responsible for what and what the content requirements of an engagement

letter are, really helped. It is something we do in class but we do not actually understand it.”

“For me it was the second section of the audit simulation. In section C and D you physically saw how to complete a working paper. I had to do a graph, so every time I completed a field, I saw how the graph developed. I really enjoyed it.”

“It helped in the sense of the practical part of auditing, since auditing was for the past two years for myself, it’s been based on theory, theory, theory, you understanding the theory, theory, theory but they weren’t showing how to apply the theory, so having the simulation actually gave us a better understanding ... especially when it comes to audit procedures because we understand that you have to confirm, you have to inspect, you have to observe, but then now that we actually have a better understanding as to what these documents actually look like and what we’re supposed to look out for – actually helped us to have a better understanding.”

The use of the videos to simulate the stock count also proved to give students some feel of the audit reality and to better understand the audit subject. One student commented:

“I feel that it gives you a perspective of audit practice especially with auditing inventory.”

7.6.6.6 Receiving effective feedback

Some students noted that the feedback obtained from the simulation assisted them in seeing what they did not understand correctly during the simulation and how it should have been done. Some of the students noted:

“The feedback was not as theoretical as a memo discussion of a class test would be. It was not just about this is where you did not understand the theory correctly, it was much more practical and you could make the link much quicker and it made sense afterwards.”

“Like the feedback session was quite long – you explained topics like from the start till the end and I feel like in that five minutes that we had this done, I think we learnt so much that whatever we didn’t understand.”

7.6.6.7 Replicating audit practice

The fact that the audit simulation replicated audit practice gave students the opportunity to be part of a real audit experience and to obtain a better understanding of how audit theory is applied in practice. Some of the quotes include:

“In practice it may not be so easy, but it gives you an idea of how it will be as you must actually perform the tests.”

“Yes, I actually did not have a clue. I studied the theory but did not actually have an idea what's going on. When it came to the review of the things it was like you do the work from the beginning and it helped me to understand.”

“I think, throughout this whole thing, you saw how it's going to work in practice. You are going to work under pressure, you are going to work with people you do not know, you will have to do other people's work, you will have to do extra, those types of things. So I really think you now saw how it is going to be and if you are going to like it or not.”

“I've never seen how working papers look like. That was the first time for me, so actually, how the theory would actually be put into real practice and real life, like how the – how a pre-engagement really looks like, how an audit – those audit procedures – how you actually put them on working papers.”

7.6.6.8 Working with a diverse group of individuals

The fact that the groups consisted of diverse individuals, with different biographical backgrounds, cognitive abilities and commitment to their studies, was found to help the students in various ways. These include:

“Due to the fact that we were a quite diverse group, you realised that you have to apply different methods of getting people involved or that you have to treat them differently to get them to participate. I do not say that you have to change your style, but that you need to realise that everybody is not that committed to their studies as you are, but you need to get them to take responsibility of their work.”

“You need to be adaptable and you need to show understanding for different people's abilities.”

“Yes, to sometimes just step back and think, okay, how does this person see it, and then maybe adjust your method of thinking.”

“Yeah, I think also when you’re selecting groups. When I’m with my, let me say English-speaking or Tswana-speaking people and then we have to accommodate somebody who is English speaking.”

“I come from a place where there is still a lot of racial separation and now I have to work with people from different races for the first time in my life. It showed me that they know just as much as we do, it’s not about this or that, but I am being completely honest here, it opened my eyes.”

7.6.6.9 Developing soft skills

Probably the most noticeable aspect that the students highlighted was the fact that the audit simulation really helped them to develop several soft skills. First, the students said the audit simulation enhanced their communication and language proficiency skills and helped to develop more self-confidence. Some students stated the following:

“It helped me to be able to communicate with people I did not know.”

“There was this one girl in our group that was very shy, we encouraged her by asking her a lot of questions and by boosting her to be part of the group and to speak to us. I think it helped her to develop more self-confidence to speak in front of people.”

“I think it helped me to be more comfortable to give my opinion, and to say to everybody, okay, I think we are doing this wrong and that we should rather do it this way, in contrast to just sitting there and to accept what everybody else says.”

“My English improved a lot.”

“In my opinion, that fact it was in English was a very good thing. I think English dominates the work force and therefore I think it’s actually fantastic exposure.”

The development of time management skills was also evident:

“Time management, as we all did not always have the same time gaps. Our group was fortunate enough not to have a lot of issues with this, but it was still something we had to consider.”

“It learned me to compromise because we plan now, okay, we have an hour break between these classes, but now it does not fit everybody, now you have to shift some things around as to accommodate everybody.”

“I think it helped me to plan better strategically, not just because we had all our other subjects still, but also because we had ten weeks. So, actually it had an element of time management and it helped me with this.”

“At the beginning I was very scared. I did not know how I was going to get everything done, but this is how you learn to manage your time.”

“Yes, I think it forces you to stick to your time planning, especially because you work in such large groups. If you do not make the deadlines, things can go wrong very quickly and you can keep the other people in the group waiting. This forces you to stick to your deadlines.”

Some leadership skills were also improved:

“I think the group leaders learnt a lot from this. You had to take charge and help everybody.”

“I feel that it taught me to just begin, to lead people and to say, okay, you do this and you do this. I feel that it helps you to be able to lead.”

The students developed logical thinking and problem solving skills, for example:

“You must be able to think logically. You must be able to think, okay, if something goes wrong now, what you are going to do.”

The results from the qualitative analysis confirmed the arguments of various researchers stated throughout this thesis. The students enjoyed the use of social media (Facebook) and felt that it assisted in their learning process (paragraph 7.6.6.2, page 309). This concurs with the findings of Bosch (2009:185) and Barnes *et al.* (2007), stated in chapter 3 (paragraph 3.2.1.2, page 69), which highlighted some advantages of Facebook as communication medium between the lecturer and the student, for example, the lecturer is able to answer the same question, in bulk, for large numbers of students and social media use is an effective and fresh approach to communication at higher education level (paragraph 3.2.1.2, page 69). This finding also proves that this study mitigated one of the disadvantages of using simulation, as noted in chapter 3 (page 83) and chapter 6 (page 185), namely that educators struggle to provide feedback and answer questions when the simulation takes place outside of class time.

As mentioned earlier, the students reported that their active involvement in the learning process assisted them in seeing how an audit is actually performed and how the theory should be applied in a scenario (paragraph 7.6.6.3, page 310). This finding supports those of Cox *et al.* (2013:651), Everly (2013:151), Lubwama *et al.* (2013:400) and Steenkamp and Von Wielligh (2011:18), as noted in chapter 3 (3.2.2, page 80), which concluded that the use of this method contributes significantly to students' learning experience and their ability to grasp important concepts. Furthermore, statements that working as part of group helped their learning (paragraph 7.6.6.4, page 311) agree with the theories on applying cooperative learning techniques in the classroom environment, as stated in chapter 3 (paragraph 3.2.2.2, page 83).

Students indicated that they were able to visualise the theory in practice (paragraph 7.6.6.5, page 311) which, in turn, made the work interesting and understandable. This provides support for arguments from chapter 3 (paragraph 3.2.2.2, page 83) by researchers such as Moore and Scevak (1997:205) and Schmidt (2009:68) who acknowledged the advantages of using visual aids in teaching. The current study further supports some of the conclusions with regard to the advantages of sufficient and effective feedback to learning (paragraph 3.2.3, page 97), as noted by Gawe *et al.* (2012:283) and Moore (2012:235). The students indicated that the feedback obtained as part of the simulation process assisted them in seeing what they did not understand correctly during the simulation and how to improve. The feedback, therefore, guided the students to identify difficulties and provided an opportunity to correct their errors (paragraph 3.2.3, page 97).

The students felt that the simulation replicated audit practice. This gave them the opportunity to be part of a real audit experience and gain a better understanding of how auditing theory is applied in practice (paragraph 7.6.6.7, page 313). These findings are in line with the conclusions reached in chapter 3 (paragraph 3.3, page 103) that audit lecturers should attempt to alter the audit classroom setting by implementing more experiential learning techniques, such as simulations, in order to bring the audit practice to the classroom.

Chapter 4 (paragraph 4.2.2, page 124) identified the variables regarding the student, namely race and ethnicity, mother tongue and general characteristics, such as commitment to learning and self-confidence, which affect their learning. The findings of the study indicated that working with a diverse group of individuals helped the students in various ways (paragraph 7.6.6.8, page 313). This proves that the variables can be mitigated by lecturers if they consider these factors when attempting to bring change to the audit classroom.

The simulation could address some of the current criticisms to audit education (paragraph 6.2, page 179), because the simulation proved to be an instrument that gave students the opportunity to develop soft skills (paragraph 7.6.6.9, page 314) and to obtain a holistic view of the audit process (paragraph 7.6.6.1, page 308). The findings also concur with those of several studies regarding the use of audit simulations as teaching tool in the audit classroom (paragraph 6.3, page 180).

Finally, the following advantages of using simulations as a teaching tool (pages 83 and 185) were brought to the audit classroom, because it became clear from the results of the focus group discussions that this newly developed simulation (paragraph 7.6.6, page 308):

- *Inspired engagement* in the learning process;
- *Encouraged learning*;
- *Provided opportunities for integration and application learning*;
- *Brought an element of business reality* to the classroom;
- *Provided soft-skill practice* that included *teamwork, collaboration* and *interpersonal social skills*;
- *Increased the ability to recall factual knowledge*;
- *Improved problem solving skills*; and
- *Increased active engagement* in the learning process, which *enhanced learning effectiveness*.

The following section draws conclusions as to whether a newly developed audit simulation would assist in enhancing the audit students' perceived broad competence.

7.6.7 Conclusion

The seventh secondary research objective (paragraph 1.5, page 15) was to evaluate whether a newly developed audit simulation would assist in enhancing audit students' perceived broad competence.

Based on the findings of both the quantitative (paragraph 7.6.5, page 297) and qualitative analysis (paragraph 7.6.6, page 308) of the study, it can be concluded that the audit simulation had:

- A positive effect on the audit students' perceived competence levels in audit and assurance, as well as on the various generic and pervasive skills, with almost half of the competencies indicating a practically significant increase ($d \geq 0.8$), as well as a medium to small practically significant increase in the perceived competence levels, with effect sizes ranging between $d = 0.21$ to $d = 1.18$ (tables 7-22 and 7-23, paragraph 7.6.5.2, page 300), hence enhancing the audit students' perceived broad competence; and
- A greater effect on the audit students' perceived broad competence and the audit students' understanding of the audit process as a whole in relation to just attending normal lectures in the audit subject, with only two competencies indicating a lower than medium practically significant difference ($d = 0.5$) (table 7-24, paragraph 7.6.5.3, page 305).

These conclusions can be ascribed to the fact that the newly developed audit simulation proved to be an instrument that:

- Gave students the opportunity to obtain a holistic view of the audit process (paragraph 7.6.6.1, page 308);
- Ensured sufficient communication between the audit lecturer and the student (paragraph 7.6.6.2, page 309);
- Actively involved the students in the learning process (paragraph 7.6.6.3, page 310);
- Gave students the prospect of gaining the advantages of working as part of a group (paragraph 7.6.6.4, page 311);
- Assisted students in visualising how the audit theory is applied in practice (paragraph 7.6.6.5, page 311);
- Ensured that effective and sufficient feedback was obtained (paragraph 7.6.6.6, page 312);
- Replicated audit practice (paragraph 7.6.6.7, page 313);
- Gave students the opportunity to work with a diverse group of individuals and learn from each other (paragraph 7.6.6.8, page 313); and
- Served as a platform for the students to develop various soft skills (paragraph 7.6.6.9, page 314).

7.6.8 Evaluation of the simulation

As noted earlier (paragraph 7.5, page 256), the last section in the post-test questionnaire focused on determining the audit students' attitude toward the audit simulation. This was done by means of an adjusted attitude measure that has been used effectively in the field of accounting education in the past (paragraph 7.5, page 256). This part of the questionnaire was completed only by the students of University X who participated in the experimental design and completed the audit simulation. The simulation was also evaluated by obtaining the students' views on how they perceived the newly developed simulation as part of the qualitative data-gathering process. The next section provides the results of the students' evaluation of the simulation by first discussing the quantitative findings from the post-test questionnaire, followed by the qualitative findings of the focus group discussions.

7.6.8.1 Quantitative evaluation of the simulation

From table 7-25, it is seen that the students' attitude toward the audit simulation was generally positive, with all mean scores greater than 3.00. The specific attitudes that were most positive were good ($M = 3.91$), comfortable ($M = 3.82$), fresh ($M = 3.81$) and understandable ($M = 3.82$). Other less positive attitudes, but still leaning toward the positive side, indicated that students felt that the audit simulation was an exciting ($M = 3.63$) and pleasant ($M = 3.69$) experience. This correlates with indications by the students' that the audit simulation was likeable ($M = 3.74$) and that they felt a sense of happiness ($M = 3.74$) and calmness ($M = 3.74$) while partaking in the audit simulation.

Table 7-25: Attitude toward the audit simulation

Question ¹	Description ²	Range	N	Mean
178	Unlikeable / Likeable	1 (Negative) to 5 (Positive)	304	3.74
179	Poor / Good	1 (Negative) to 5 (Positive)	304	3.91
180	Unhappy / Happy	1 (Negative) to 5 (Positive)	304	3.74
181	Uncomfortable / Comfortable	1 (Negative) to 5 (Positive)	304	3.82
182	Tense / Calm	1 (Negative) to 5 (Positive)	304	3.74
183	Dull / Exciting	1 (Negative) to 5 (Positive)	304	3.63
184	Suffocating / Fresh	1 (Negative) to 5 (Positive)	304	3.81
185	Unpleasant / Pleasant	1 (Negative) to 5 (Positive)	304	3.69
186	Confused / Understandable	1 (Negative) to 5 (Positive)	304	3.82

¹ Annexure B, page 420

² Items form part of Kay's Computer Attitude Measure as used by Noyes and Garland (2005:238 – adapted), Fouché (2006:183 – adapted) and Van der Merwe (2013:152 – adapted).

This attitude measure, yet again, provided valuable insights on measuring students' attitudes toward an object applied as educational tool. These insights were supported by the focus group discussions, which are addressed in the next section.

7.6.8.2 Qualitative evaluation of the simulation

As noted earlier (paragraph 7.5.1, page 256), the participating students' attitude toward the audit simulation was evaluated quantitatively as well by posing the following questions during focus groups discussions:

What went well during the audit simulation?

What did you not enjoy about the audit simulation?

Do you have any other comment you would like to add?

From these discussions, the following themes emerged as the reasons that contributed to the students' overall positive feelings and attitude toward to audit simulation:

The use of social media

The students indicated that the incorporation of Facebook into the audit simulation created a positive attitude within the groups and motivated them to learn. This was made evident by quotes such as:

"Our group loved using Facebook. We were like one of the first groups that uploaded photos onto the Facebook page, and we also uploaded a video. Our group were there hey."

"It was a very good idea. It's well executed. I'm very glad that it worked because I mean, sometimes, then you have a question, then you're there, and I mean, you know, it's technical points, so it's not like you can ask friends."

The simulation was well structured and developed

The way in which the builds of the simulation were structured and developed (in other words the framework that was applied) contributed to the positive experience of the students. They stated that:

"I think the participant guide explained it and laid the audit process out better. It showed us why we do what we do and what you should do and know at each step in the audit process."

“I really liked it. I think a lot of time and effort went into it.”

“The structuring made it easy to navigate through the simulation.”

“If you had to go and look for something you immediately knew were to go and look.”

“It was very well developed.”

“The reference on the working papers made it easy to relate where to find stuff. You do not have to search for two hours on end to get the stuff. So I think the references really worked well.”

Working in audit teams

The students indicated that the random assignment of members into the various groups had a negative impact at first, but actually made the experience better because they made new friends. For example:

“Because we were not allowed to choose our own teams you met new people. Like now, everybody greets each other.”

“I enjoyed it, I made new friends.”

“This assignment came with a lot of other assignments where we were allowed to choose our own groups and we were usually only three people that knew each other. Now, suddenly you have to be groups of ten people, it's awkward. So now that you have assigned us to a group already, we know okay, we had to meet new people and that was good for me.”

“We were a great group, and in the end I was glad that the groups were structured in this manner. It is so that we met new people in the process, people that have been studying with you for three years and you do not actually know the person. I think it opens other doors and new friendships.”

The students reported the following aspects that might improve their experience should they be changed or considered in future use of the audit simulation:

Timing of performing the simulation

The one major issue students raised was that the time the simulation was performed was in a very busy period during their studies and that they were under a great deal of pressure. This was apparent by quotes in each focus group such as:

“This semester you have a lot of assignments, I mean the strategy assignment is a big project and you have to drive back and forth. You also have a financial management, accounting and tax assignment and then audit also comes along. I think that we need to get a better time for this.”

“During the second semester, it feels that the lecturers for some reason have ten million things that they try to finish in a month or a month and a half. Everybody has assignments, everybody has whatever, which they try to finish during that time and during the first semester, which is actually the long semester, everybody is like chilled.”

Cost versus benefit

The students felt that the simulation had some unexpected financial implications and the fact that the project only counted 10% toward their final mark was not, in some instances, worth the financial cost of submitting the project in hardcopy. Some students felt very strongly as they stated:

“To go and print everything was a mission and a big unexpected expense.”

“It is quite a bit of paper work, a lot of things to print. Can’t we rather have submitted it electronically?”

“I did not like the fact that it counted so little for so much work, like only 10% of our mark. Like some of us did not even need that 10% and then you had to neglect your other subjects for it.”

From these findings, it seems that, students had a positive attitude overall toward the newly developed audit simulation and that this positive attitude might have contributed to their learning experience. This is reassuring because, as stated by Noyes and Garland (2005:234) (paragraph 7.5, page 256), students’ attitude toward an object influences their behaviour and could hinder the learning that should be taking place while performing the simulation. One of the advantages of simulation use, noted in chapter 3 (page 83) and

chapter 6 (page 185), was also proved, because it is clear that the newly developed audit simulation created a positive attitude toward learning.

Finally, it can be concluded that two of the remaining three disadvantages of simulation use as a teaching tool, as noted in chapter 3 (page 83) and chapter 6 (page 185), were mitigated in this audit simulation. This is because the students mentioned that the simulation was well structured and developed and, therefore, disadvantages such as possible confusion and frustration were minimised. The disadvantage that simulations are very time consuming still proved to be a concern although, from the findings of this chapter, it seems that this issue did not take away from the learning experience of the students.

7.7 Chapter summary

In this chapter, the two secondary research objectives, which have not been addressed in chapters two to six (page 26 to page 248), received attention. The first was to identify the research methodologies to be applied throughout this study (secondary research objective i(c)), followed by an evaluation as to whether the newly developed audit simulation would assist in enhancing audit students' perceived broad competence (secondary research objective vii) (paragraph 1.5, page 15).

In addressing these research objectives, the chapter embarked on identifying and discussing the research methodology applied in this study. It was noted that the research design was a mixed methodology, which falls into the pragmatic research paradigm. This allowed the author to apply both quantitative and qualitative methods. The quantitative results were obtained by means of a group-administered questionnaire as part of a quasi-experimental (pre-test/post-test) design. These results were informed by the qualitative results obtained from content analysing the transcripts of the focus group discussions. The latter was done by applying a phenomenological theoretical framework to the qualitative data.

Following the discussion of the philosophical paradigm and applied research design, the focus shifted to explaining and motivating the sample population that participated in the experiment. It was concluded that the sample population was representative of the phenomenon under investigation which, in turn, contributed to limiting bias results. Next, the way in which the experiment was conducted was explained. The method of data collection was discussed, which included how the validity and reliability were ensured and confirmed of the data from the pre-test and post-test questionnaires in the quasi-experimental design, as well as from the focus group results. The ethical considerations in performing research were also elaborated on, including how they were applied in this study.

An analysis of the results followed. This involved a t-test for the effect of the biographical backgrounds of students on their perception as to the ability of current teaching methodology to effectively assist and enable them to be competent in the various competencies associated with auditing and assurance and generic and pervasive skills. The results indicated no significant effect, after which another t-test was performed to determine whether the biographical backgrounds of students had any effect on their academic performance in the audit subject. From this analysis, the following was noted:

- Gender and level of practical experience did not seem to have a significant effect on the student's academic achievement; and
- Differences in race, enrolment status and mother tongue appear to have had a significant effect on how the students performed in the audit subject.

This was followed by the conclusion that, in line with other studies highlighted in this thesis, the biographical backgrounds of students could have an impact on their academic performance, specifically in the audit subject.

Next, some descriptive statistics were discussed as obtained from the pre-test questionnaire. These indicated that the current teaching methodology applied in the classroom was still not effective enough to ensure that students feel competent in the various competencies informed by the subject content of auditing. It was also noted that this teaching methodology was not assisting students in being able to demonstrate the required skills related to the generic and pervasive skill competencies of personal attributes and professional skills. However, it seems that enough has been done to ensure that students will be able to act ethically when entering audit practice in general. It was concluded that this finding corroborated the problem statement of this thesis and that change is still required in the audit education approach followed to prepare audit students at higher education level for the actual auditing environment.

The descriptive statistics were followed by a t-test to evaluate whether the newly developed audit simulation would assist in enhancing the audit students' perceived broad competence, where it was concluded that it did indeed. This conclusion was based on the findings from both the t-test and the results of the focus group discussions. The t-test indicated that the audit simulation had:

- A positive effect on the audit students' perceived competence levels in audit and assurance, as well as in the various generic and pervasive skills, which enhanced the audit students' perceived broad competence; and

- A greater effect on the audit students' perceived broad competence and their understanding of the audit process as a whole in relation to just attending normal lectures in the audit subject.

From the focus group results, it was established that the students felt more competent in auditing and assurance, as well as in the various generic and pervasive skills requirements, after the audit simulation. They noted the following reasons for their perceived improved competence level in the audit subject and their ability to demonstrate the generic and pervasive skill requirements:

- They obtained a holistic view of the audit process;
- Sufficient communication took place;
- They were actively involved in the learning process;
- They worked as part of a group;
- Visualisation of the theory in practice was possible;
- They obtained effective and sufficient feedback;
- The simulation replicated audit practice;
- They had the opportunity to work with a diverse group of individuals; and
- The opportunity to develop various soft skills was given.

The results, thus, prove that several of the advantages of simulation use, as identified from the literature, were present in the newly developed audit simulation.

The data analysis concluded with an evaluation of the students' attitude toward the audit simulation. It was mentioned that the students in general had a positive attitude toward the simulation, which might have been encouraged by the use of Facebook, the manner in which the simulation was designed and structured, and the opportunity they had to work in audit teams. Some suggestions to improve the simulation, which might further increase the positivity of students toward the simulation, were also discussed. Emphasis was placed again on the importance of obtaining students' views and measuring their attitude toward an instrument applied as teaching tool. It was also confirmed that these factors need consideration because they definitely seem to have an impact on learning. Finally, the results indicated that three out of the four disadvantages of simulation use, as identified

throughout this thesis, were mitigated by the simulation project. The remaining disadvantage which relates to the time burden of performing such a simulation did not hinder the students' learning experience.

In conclusion, Zora Neale Hurston, a former American folklorist, anthropologist and author claimed that "[r]esearch is formalized curiosity. It is poking and prying with a purpose" (Hurston, 2014). By taking these words to heart, we as accounting education researchers, might find that more research in this area, with the specific objective of improving the teaching quality in audit education, could assist in the process of bringing the much-needed change to audit education.

Chapter 8

Conclusions, recommendations and reflections

“Education is the most powerful weapon which you can use to change the world.” – Nelson Mandela

8.1 Introduction

“Education is the most powerful weapon which you can use to change the world” (Mandela, 2014). These inspirational words were mentioned in chapter 1 (page 1) and, in retrospect, support the findings of this study which emphasise the importance of accounting education research, both locally and internationally.

It was noted in chapter 1 (paragraphs 1.1 to 1.2, pages 1 to 15) that a variety of issues in accounting education have been identified by researchers, such as Fowler (2005:41), and in audit education specifically, by Barac (2012:48). This research showed clearly that change is still required in the current approach followed to prepare audit students at higher education level for the actual auditing environment. It was highlighted by researchers such as Tonge and Willet (2012:171) that students still find the audit subject baffling and difficult in spite of global attempts by researchers to address this issue over the past few decades (paragraph 1.2, page 11). Furthermore, it was established that this phenomenon could be ascribed to another concern in accounting education research in general, which is the gap between researchers and practitioners in accounting education and research. This gap has been caused by the fact that research seems too technical for practitioners to understand, and too many research objectives seem irrelevant to the problems experienced in practice (Elliot, 2010:1; Fouché, 2013:137) (paragraph 1.2, page 11).

Based on these noteworthy findings, the problem statement of this study was formulated (paragraph 1.3, page 15) and it was argued that research in audit education specifically is both topical and imperative if we as accounting educationalists are to deliver students who can function effectively and apply their skills in audit practice.

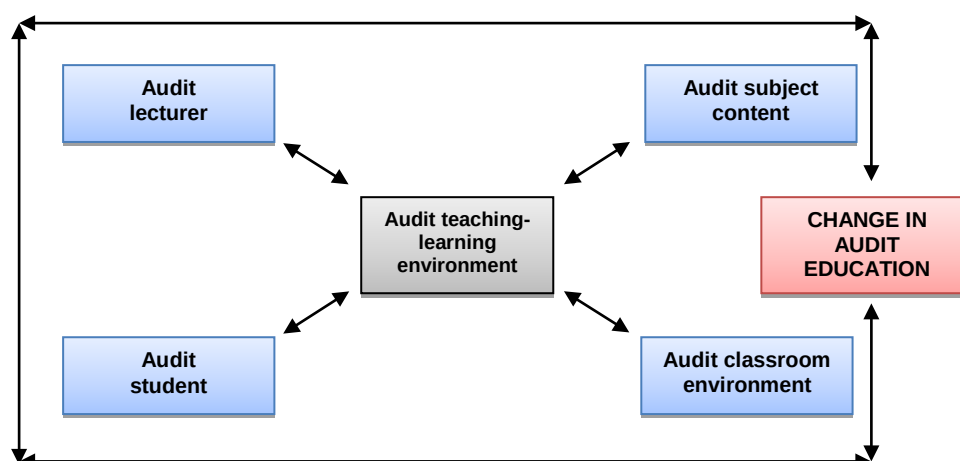
Following this argument, this thesis aimed to achieve **one overarching primary objective**:

Intervene and assist in the process of bringing change to the current approach followed in audit education by developing an instrument (i.e. simulation project) which can be implemented by universities and other higher education institutions, in South Africa and globally (paragraph 1.5, page 15).

In addressing the primary objective, it was noted in chapter 1 (paragraph 1.1.4, page 9) that all the variables in the teaching-learning environment need consideration when attempting to bring change to the current approach in audit education. It was established that the change in the approach to audit education should start with the **audit lecturer**, because he or she has control over the majority of the other variables such as teaching methodologies, communication between the audit lecturer and the **audit student**, assessment and feedback approaches, guidance and support to the audit student, as well as the relationship between these two variables in the audit teaching-learning environment. It was found that, if audit lecturers are to attempt changing the approach in audit education, they need to understand the learning approaches of the audit student and the biographical factors and other obstacles which hinder student performance in the audit subject.

The third variable was the **content** requirements in the audit teaching-learning environment. The curriculum at SAICA-accredited universities or other higher education institutions is developed based on the content requirements stipulated in the competency framework set by SAICA. The audit curriculum at universities and other higher education institutions should be developed to such an extent that student achievement is not hindered and that the expectation gap between audit practitioners and audit educators is bridged. It was concluded that the audit lecturer should consider changing the **audit classroom milieu** so as to place the students in a real-life audit practice situation which will, in turn, assist them in mastering the content requirements.

Figure 8-1 that follows was illustrated in chapter 1 (paragraph 1.1.4, page 9) to demonstrate the variables in the audit teaching-learning environment which need consideration when change is to be brought to the current approach in audit education.

Figure 8-1: The audit teaching-learning environment

(Source: Author, figure 1-1, paragraph 1.1.4, page 9)

Next, these variables, together with some of the philosophical research paradigms and research methodologies that could be applied in accounting education research, were explored in more detail throughout chapters 2 to 5 (pages 26 to 172). The latter addressed the first to the fourth secondary research objectives (paragraph 1.5, page 15). In chapters 6 (page 174) and 7 (page 248) the focus shifted to the way in which the findings and conclusions of these secondary research objectives were incorporated into, first, establishing a framework for simulation design, secondly, the actual development of the audit simulation and, finally, the empirical evaluation of the newly developed simulation. The latter addressed the fifth, sixth and seventh secondary research objectives (paragraph 1.5, page 15).

The purpose of the current chapter is to mainly address the remaining secondary research objective, which is to make recommendations on how to answer the call to bring change to the audit classroom (paragraph 1.5, page 15). The remainder of this chapter thus focuses on revisiting the secondary research objectives of this study, together with providing a summary of the results and conclusions on each of the secondary research objectives (paragraph 8.2, page 330). The hypothesis is discussed then (paragraph 8.3, page 366), followed by some recommendations, based on the results of the empirical study and the subsequent conclusions drawn, on how to answer the call to bring change to the audit classroom (paragraph 8.4, page 367). Next, a conclusion on the overall primary research objective of the study is provided, which is supported by the conclusions on each of the secondary research objectives (paragraph 8.5, page 372). The contribution of this study to audit education (paragraph 8.6, page 373) is also emphasised, after which the limitations of the study, as well as how they were mitigated, are noted (paragraph 8.7, page 375). This

chapter concludes with providing some useful areas for further development and research in audit education, which could also be valuable to accounting education in general (paragraph 8.8, page 377), followed by some final remarks (paragraph 8.9, page 378).

8.2 Revisiting the research objectives, results and conclusions

As noted in chapter 1 (paragraph 1.5, page 15) and in the introduction to this chapter (paragraph 8.1, page 327), this study aimed to achieve one overarching primary research objective, namely to intervene and assist in the process of bringing change to the current approach followed in audit education. In order to address this all-inclusive main objective, this study aimed to achieve **eight** secondary research objectives. These objectives, as stated in chapter 1 (paragraph 1.5, page 15), are returned to next, together with a discussion of the most notable findings and conclusions regarding each one.

8.2.1 Exploring research methodology(ies) applicable to accounting education research based on an explorative study into some philosophical paradigms and other underpinnings of the qualitative and quantitative research methods

In partly addressing the first secondary research objective of this study, the author attempted to (paragraph 1.5, page 15):

- Present the novice accounting education researcher with some guidelines on the philosophies and intricacies of the science of research methodology to equip them with a point of reference when doing research and interpreting results, specifically in the social sciences;
- Highlight some best practices in conducting research which are applicable to accounting education in general; and
- Identify the research methodology to be applied in this study (chapter 7, page 249).

In addressing the secondary research objective, chapter 2 commenced with an investigation and explanation of the terms philosophy and philosophical paradigm and the various philosophical paradigms such as the positivist and interpretivist paradigms (paragraph 2.1, page 26). Each paradigm's ontological, epistemological and methodological assumptions were explored, discussed and explained (paragraph 2.2, page 28). It was concluded that

researchers in the field of accounting education will each have their own preference according to which they conduct research, whether in the positivist or interpretivist paradigm depending, based on their assumptions regarding the ontological, epistemological and methodological components of research (paragraph 2.2, page 28).

The methodologies applicable to each of these paradigms were discussed and it was concluded that both the qualitative and quantitative research methodologies, with their advantages and limitations, would be suitable for investigating certain phenomena in the field of accounting education (paragraph 2.3, page 33 and paragraph 2.4, page 39). The methods of data collection in each of these research methodologies were explained, where the suitability of each method's use in accounting education was highlighted (paragraph 2.3.1, page 35 and paragraph 2.4.6, page 43). Various examples of how these data collection techniques have been and could be applied in audit education were given (paragraph 2.3.1, page 35 and paragraph 2.4.6, page 43).

The importance of research design and the theoretical frameworks that the accounting education researcher can apply while conducting qualitative research was described (paragraph 2.4.1, page 40 to paragraph 2.4.5, page 42). The conclusion was reached that these theoretical frameworks serve as the foundation on which every qualitative research project should be built (paragraph 2.4.1, page 40 to paragraph 2.4.5, page 42). The usefulness of using mixed methodologies in general was indicated, together with the philosophical paradigm they belong to (paragraph 2.5, page 50). Various methods in combining quantitative and qualitative methodologies were observed, also in accounting education, and a motivation was provided for the use of mixed methods to maximise the research contributions in accounting education (paragraph 2.5, page 50).

The overarching conclusion was that researchers in accounting education have to apply a research methodology that is applicable and feasible when investigating a specific phenomenon. The choice of research method will depend on what the researcher wants to achieve ultimately (paragraph 2.6, page 52).

Finally, some of the conclusions with regard to the findings of chapter 2 were applied to address the last portion of the first secondary research objective, which was to identify the research methodology to be used in this study. The latter, therefore, showed how the author incorporated the conclusions and recommendations made throughout chapter 2 (pages 26 to 52) in performing his research in order to maximise the contribution of this thesis to not only accounting education research, but also to closing the gap between the audit classroom and audit practice.

The research methodology followed in this thesis was discussed in chapter 7 (paragraph 7.2, page 249 to paragraph 7.5, page 256) and is revisited later in this chapter (paragraph 8.2.6.1, page 351). The recommendations made in chapter 2 (pages 26 to 52) on the way forward for the novice accounting education researcher are revisited later in this chapter (paragraph 8.4.1, page 367).

Next, a discussion is provided on the findings and conclusions from the analysis of the audit lecturer and audit classroom as variables effecting change in the field of auditing, as noted in chapter 3 (page 55).

8.2.2 An analysis of the audit lecturer and audit classroom as variables effecting change in the field of auditing at higher education institutions, not just in South Africa, but also internationally

An investigation of the audit lecturer and the audit classroom yielded valuable insights into these two variables (chapter 3, page 55) and addressed secondary research objective two (paragraph 1.5, page 15). In defining the audit lecturer as the most important variable effecting change in audit education today, a variety of factors or other variables were identified and explored over which the lecturer has control. These factors or other variables include (i) the general characteristics of an effective lecturer; (ii) teaching methodologies; and (iii) methods of assessment and feedback. Paragraphs 8.2.2.1 to 8.2.2.3 summarise the most important results and conclusions regarding each of these factors or other variables, as discussed throughout chapter 3 (page 55). This is followed by a summary on the findings and conclusions with regard to the physical audit classroom environment (paragraph 8.2.2.4, page 337).

8.2.2.1 Summary on the general characteristics of an effective lecturer

In chapter 3 paragraph 3.2.1 (page 56), the general characteristics of an effective lecturer were identified and discussed, together with how and why their application by the audit lecturer can assist in bringing change to the audit classroom. The findings and conclusions in chapter 3 (paragraph 3.2.1, page 56) on each of characteristics are returned to next.

Character and personality – Emphasis was placed on whether lecturers should or can change their personality to improve student learning. It was noted that, despite this question, being respectful, impartial, compassionate, selfless and approachable were found to be critical, due to the fact that these traits have an effect on the student and, eventually, the

overall teaching-learning environment. Thus, it is vital that audit lecturers are aware of the impact of their characteristics and personality and that they continue to develop or improve their attributes in order to enrich student learning and, ultimately, bring change to the current approach to audit education (paragraph 3.2.1.1, page 68).

Communication – Communication between the lecturer and the student in general was identified as a crucial factor that affects the overall teaching-learning environment. It was established that, although some accounting and education lecturers in certain countries do not see the significance of social media as a means of communication, the majority acknowledge that using social media to communicate with their students does in fact enhance student learning. It was concluded that, in an audit education context, audit lecturers should incorporate social media as a means of communication between themselves and their students. This will assist in establishing the credibility of the lecturer (ethos) from a student perspective; stimulate the desire of students to learn because they are familiar with technological methods of communication (pathos); and serve as a medium by which the content of the subject can be communicated (logos). It was also concluded that social media can further assist in bridging issues such as individualism, collectivism and different levels of language proficiency. In addition, effective communication between the audit lecturer and the audit student can contribute to changing the current approach in audit education – this will produce students who are self-confident and motivated and have a better understanding of the subject (paragraph 3.2.1.2, page 69).

Motivation – A shift was indicated in the motivational approaches applied by lecturers in general from supporting extrinsic motivational behaviours toward intrinsic motivational behaviours. This holds promise for improving student success and psychological development. Lecturers in audit education can accomplish this by being more student oriented and responsive to their needs and concerns and by applying autonomous motivational styles. An example is providing students with a choice in performing an activity as to enhance the development of intrinsic motivation within the audit student. This could, in turn, assist in diminishing extrinsic motivational behaviours such as only studying the audit subject due to a fear of failure (paragraph 3.2.1.3, page 73).

Commitment to continuing professional development – It was noted that the lecturers' commitment to CPD is an essential general characteristic of an effective lecturer. It was further established that lecturers in general are required to commit to continuously developing and improving their professional competence. In this way, they will remain knowledgeable regarding new developments and research in the area, as well as informed on the course content they are lecturing. It was concluded that audit lecturers also need to

ensure that they remain up to date with the developments in the profession. This commitment to CPD will ensure that they remain knowledgeable and informed, have the ability to discuss recent developments in the subject field and, finally, are perceived as respected and competent in the eyes of their students. It was recognised that, by committing to a process of CPD, the audit lecturer can, ultimately, contribute to bringing change to the current approach to audit education (paragraph 3.2.1.4, page 77).

Preparing for and presenting the actual lecture – In exploring this characteristic of an effective lecturer, it was noted that lecturers, but more specifically audit lecturers, should be open to the use of new technologies in presenting the lectures. This will contribute not only to their CPD, but also to ensuring that they remain effective. Accordingly, Prezi as a contemporary teaching technology was identified as a presentation tool that can and will bring change in the approach to audit education, as well as:

- Motivate students;
- Encourage their participation in the classroom; and
- Ultimately, add in stimulating the learning experience because of its unique presentation and learning features (paragraph 3.2.1.5, page 78).

8.2.2.2 Summary on teaching methodologies

The following was noted in chapter 3 (paragraph 3.2.2, page 80) in connection with the teaching methodologies that can be applied in the audit classroom and how their use can affect the audit teaching-learning environment.

Passive learning – The lecture as a teaching method has been applied in the educational environment despite its limitations, for example, students battle to fully grasp the subject or gain understanding, they become bored and they do not feel motivated. Passive learning also focuses on the lowest level of student cognition, and discipline problems can develop in the classroom. The main reason for applying a passive approach to audit education is that it serves as the most efficient form of conveying robust volumes of information to students, seeing that audit education consists of large quantities of information that students need to grasp in a short time. The weaknesses of following a passive learning teaching methodology in the audit classroom have been acknowledged by some lecturers in audit education. These lecturers have turned to active methodologies in an attempt to overcome the barriers that a passive approach brings to the audit classroom and to foster change to the current approach in audit education (paragraph 3.2.2.1, page 81).

Active learning – Although they are the most prominent teaching method and should not be disregarded, lectures can also be used to facilitate active learning which would allow students to discover the course material at a more profound level and stimulate understanding of the subject under investigation. Actively engaging students in the classroom helps to keep their attention and enhance their cognitive development and knowledge retention. Active learning may include the use of visual aids, case studies, simulations and cooperative learning techniques, all of which provide a variety of benefits and advantages for students studying any form of accounting degree. There are, however, some disadvantages of these methods, such as time constraints and possible frustration and confusion if the active learning tool is not applied correctly. Thus, the best combination and the possibility of introducing a blended learning approach to the classroom could encourage student and lecturer interaction, resulting in a more positive learning environment and possibly spontaneous change to the audit classroom (paragraph 3.2.2.2, page 83).

Blended learning – Although numerous studies have been conducted on blended learning and its effects on student performance in business, accounting, biology, psychology and education, there is a lack of research into the effect of blended learning in audit education despite the ongoing call for the implementation of blended learning strategies. Blended learning mainly consists of two approaches which include the use of pre-recorded lectures followed by how blended learning can be applied in assessment and feedback approaches. The literature revealed that attending pre-recorded lectures and doing class exercises allow students to become actively engaged in the learning process and develop better comprehension of the subject content. Furthermore, pre-recorded lectures assist students in better recalling information, and improve their understanding, application, analysis and integration of the subject content, in contrast with a traditional passive methodology. While care must be taken not to overgeneralise the use of blended learning approaches in all fields of education, the current audit education milieu at higher education institutions should be able to accommodate some of these approaches in an attempt to improve audit education. For example, various technological tools such as Video Scribe and Go Animate can be applied to develop lectures that can be viewed by students before or after the actual face-to-face class session. In this way, an effective teaching methodology can be established which could be applied in audit courses at universities and other higher education institutions (paragraph 3.2.2.3, page 91).

An effective teaching methodology in audit education – Audit curriculum consists of robust volumes of information that need to be conveyed to students in a short time. A traditional passive teaching methodology is being used currently to facilitate the transfer of

the audit knowledge from the lecturer to the student. Audit lecturers have admitted to the limits of the passive learning methodology and to the advantages of active and blended learning methods. Yet, they still seem to use passive techniques primarily due to the time limitations that they are subject to. The literature has provided no fixed method or consensus on an effective methodology in teaching auditing to date, because each method comes with its own advantages and disadvantages. Indeed, some methods are more appropriate than others in certain situations and audit educators should seek to mobilise the methodology that will not only enhance student understanding of the audit subject content, but also develop important skills such as critical thinking, problem solving and other soft skills required to enter professional practice after graduation. This methodology should also not be confined to limitations such as time constraints and other factors affecting the lecturer, for example, stagnation and stubbornness (paragraph 3.2.2.4, page 93).

8.2.2.3 Summary on the methods of assessment and feedback

It was noted from chapter 3 (paragraph 3.2.3, page 97) that a variety of formative and summative assessment and feedback methods are available to the audit lecturer. The following paragraphs provide a discussion of the findings and conclusions reached in chapter 3 (paragraph 3.2.3, page 97) on these methods.

Formative assessment – It was mentioned that this form of assessment can take place in various forms, for instance, non-graded tests administered throughout the term, homework assignments, student–lecturer conferences, parent–lecturer conferences, and informal observations made by the lecturer in the classroom. It was also established that formative assessment assists lecturers not only in monitoring students’ understanding of the learning content, or lack of it, but also in supporting them in gathering valuable information about their teaching. This information should be applied in improving their lecturing skills, which would lead to improved student comprehension and learning. Based on these findings, it was concluded that the objectives of this assessment method are not only primarily student centered, but also lecturer centred instead, because the method assists in (paragraph 3.2.3.1, page 98):

- Guiding improvement, identifying difficulties and giving students the opportunity to correct their errors;
- Obtaining an understanding of students’ knowledge on a specific topic before the lecture starts; and

- Providing lecturers with feedback on their lecturing ability and adding variety to the learning experiences of students.

Summative assessment – In contrast to formative assessment which takes place during the whole learning period, summative assessment focuses on determining whether the student has met the set learning outcomes. For this purpose, formal observation scales, ratings, standardised tests, examinations and projects are used and usually applied at the end of a learning session.

Finally, it was established that, after completion of their formal training at a university or other higher education institution, all aspiring CA students will write two board examinations set by SAICA (2010:6). The fact that these examinations are summative in nature further highlighted the fact that audit lecturers should more frequently, but preferably throughout the whole formal training process, apply formative assessment methods. This will ensure that students obtain a holistic view of what auditing entails and are equipped with the ability to apply their theoretical knowledge, not only when completing summative assessments, but also when entering audit practice (paragraph 3.2.3.2, page 102).

8.2.2.4 Summary on the audit classroom environment

The following observations and conclusions were made from chapter 3 (paragraph 3.3, page 103):

- The audit classroom should assist the students to not only learn the subject content of auditing, but to also be able to apply themselves in practice after graduation;
- The general audit classroom environment is affected by several factors, such as gender equity, collaboration, risk involvement competition, motivation, self-confidence, teacher and student personality and, finally, the knowledge, skills and attitude of students; and
- It is imperative that audit lecturers set the audit classroom as a milieu that replicates audit practice by applying experiential learning techniques such as simulations and games and contribute to effecting change in audit education.

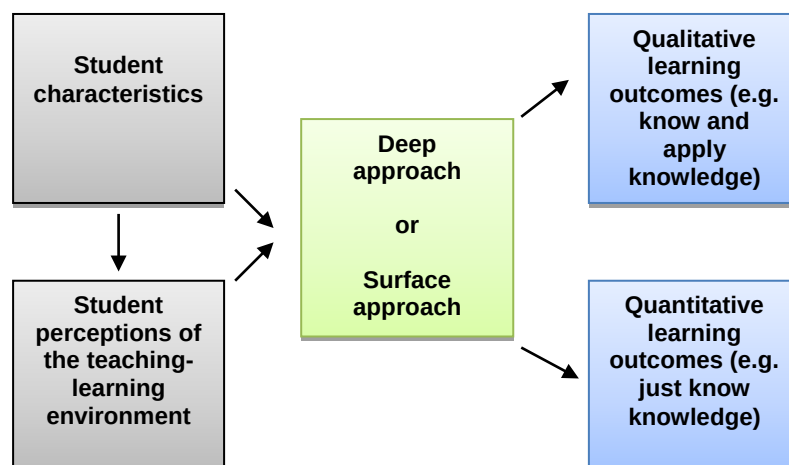
8.2.3 Exploring and understanding the audit student as a variable in the audit teaching-learning environment effecting change in audit education

The third secondary research objective of this study (paragraph 1.5, page 15) was addressed by exploring the audit student as a variable effecting change in audit education. Several factors affecting the audit student as a variable in the audit teaching-learning environment were identified. These include the learning approaches that students apply to obtain an understanding of the subject matter, and the biographical factors (endogenous) and other obstacles and barriers (exogenous) which audit students are exposed to and which could affect their achievement. A summary of the most significant results and conclusions on each of these factors, as identified in chapter 4 (page 110), is provided next (paragraphs 8.2.3.1 to 8.2.3.2).

8.2.3.1 Approaches to learning

It was established in chapter 4 (paragraph 4.2.1, page 111) that audit students' approaches to learning, their personal characteristics, their perceptions of their teaching-learning environment and the quality of the learning outcomes all have an impact on each other. Based on these findings, figure 8-2 was used in chapter 4 to illustrate this interaction among the factors, as noted from the literature (paragraph 4.2.1.4, page 122).

Figure 8-2: Audit students' approaches to learning, their personal characteristics, their perceptions of their teaching-learning environment and the quality of the learning outcomes



(Source: Biggs, 1989:11 – Adapted, figure 4-1, paragraph 4.2.1.4, page 122)

Each of these factors and their effect on the overall audit teaching-learning environment are returned to next.

Student characteristics and their perceptions of the teaching-learning environment –

Students sometimes have a preferred orientation toward, or an intention to use, a deep or surface approach to learning due to their personal characteristics. However, it is also how they perceive the teaching-learning environment and the effect of their personal characteristics on the perception they have of the teaching-learning environment which will, ultimately, produce or prevent a specific learning approach from being used (paragraph 4.2.1.1, page 114). The way in which students' characteristics affect their perception of the audit teaching-learning environment was tested and the results were discussed in chapter 7 (paragraph 7.6.1, page 266). These results are revisited later in this chapter (paragraph 8.2.6.2, page 354).

Perceptions of the teaching-learning environment and learning approaches –

The more positive the student's perception of the variables in the teaching-learning environment, the greater the probability that the student will apply a deep learning approach. The contrary was also noted in that students tend to follow a surface approach to learning if they perceive the variables in the teaching-learning environment negatively. The use of (i) formative assessment and feedback approaches; (ii) active teaching methodologies such as case studies and simulations; and (iii) the presence of effective lecturer characteristics such as being supportive and helpful to students, would stimulate students in adopting a deep approach to learning. This, in turn, could change the current norm of surface learning in accounting and audit education (paragraph 4.2.1.2, page 117) and assist in improving the approach to audit education.

Learning approaches and learning outcomes –

It was noted that a deep learning approach contributed to achieving high-quality learning outcomes such as critical thinking and higher marks in tests and examinations, whereas a surface approach resulted in achieving lower-quality learning outcomes. In light of the high level of understanding, ability to apply theoretical knowledge and competencies required by professional accountants – which require the mastering of high-quality learning outcomes – it is imperative that audit students adopt a deep approach to learning.

Based on these findings, the conclusion was drawn that audit lecturers need to promote a deep approach to learning. They can do this by addressing the variables in the audit teaching-learning environment to create positive perceptions of these variables in audit students. This could aid in the achievement of more high-quality outcomes and in answering

the call for change in the learning approaches of accounting students in general. The latter will contribute to bringing change to the current approach in audit education.

A summary follows of the findings and conclusions on the biographical factors and other barriers that hinder student performance.

8.2.3.2 Biographical factors and other barriers

Various biographical factors and other barriers which could be outside the control of the students themselves were identified and could present a roadblock in the learning process of students. The most important conclusions regarding each of these factors, as mentioned in chapter 4 (paragraph 4.2.2, page 124), are discussed below.

Biographical factors (endogenous factors) – There are a variety of biographical factors which affect student performance in the accounting education field. *Gender* seems to have an impact on performance in the audit subject specifically, although it was established that *student characteristics*, such as priorities, methods of study and organisational skills associated with the specific gender, have an impact on performance in the audit subject instead of being male or female. It was also found that the quality of students' *primary and secondary education*, and whether they had *prior knowledge* of accounting on secondary level or elsewhere, affected their learning (paragraph 4.2.2.1, page 125).

It seems that younger students outperformed their older counterparts, and studying in one's *mother tongue* showed to be to a student's advantage. *Race and ethnicity* might also have an impact on success in the accounting field, as do frequent class attendance. Whether *full-time or part-time enrolment* for a specific accounting qualification at a tertiary institution has an effect on students' performance, remains to be proven. In more broad terms, it was shown that student performance was affected by *cultural background* and *their perceptions* on whether universities or other higher education institutions can, in fact, contribute to their learning experience. *Class attendance* also clearly played an important role in student success (paragraph 4.2.2.1, page 125). In addition, students' *self-expectations*, *self-confidence*, *prior academic achievement* and *motives* for studying an accounting qualification had an impact on their learning success. *Duration of studies* was also an indicating factor of student performance.

It was concluded that the audit lecturer cannot always control the biographical factors that audit students are exposed to. However, they need to consider these factors in educating the students, as these factors affect the audit teaching-learning environment and would, therefore, be relevant when attempting to bring change to audit education

(paragraph 4.2.2.1, page 125). The effect of these biographical factors on the academic performance of the audit students was tested and the results were discussed in chapter 7 (paragraph 7.6.2, page 274). These results are revisited later in this chapter (paragraph 8.2.6.2, page 354).

Other barriers (exogenous factors) – Various studies investigated the effect of exogenous factors on student achievement. It was noted that a variety of exogenous factors affect student achievement. These include (paragraph 4.2.2.3, page 133):

- Lecturers' teaching methodologies;
- Lecturers' approachability;
- Clarity of examination questions;
- Usefulness of mid-term tests and homework;
- Sufficiency of class length;
- Relevance of the module content;
- Sufficiency of communication;
- Motivation techniques applied by lecturers to motivate students;
- Quality and frequency of supplemental instruction; and
- Quality of textbooks and study guides.

It was concluded that audit lecturers need to consider these factors when attempting to bring change to audit education (paragraph 4.2.2.3, page 133). The subject content of the audit teaching-learning environment was considered next and is referred to in the next paragraph.

8.2.4 Investigate the required content of the audit curriculum to identify the technical knowledge and skills required to be perceived competent in the field of auditing

The last variable in the audit teaching-learning environment to be investigated was the subject content (see chapter 5, page 138), which addressed the fourth secondary research objective, as stated in chapter 1 (paragraph 1.5, page 15). Mention was made of the call for change in the approach to teaching auditing at universities or other higher education

institutions as a result of the accounting profession's emphasis on the following (paragraph 5.1, page 138):

- Students should not only understand the technical knowledge of the audit; but
- Be able to apply this knowledge and acquire a number of generic and pervasive skills that will enhance their ability to be hired and to apply themselves in public practice.

It was noted that SAICA (2010) had issued a competency framework (version 2) setting out the required competencies of entry-level CA(SA)s. This framework prescribes the audit subject content and generic and pervasive skills which students need to master at higher education level. This framework now indicates or clarifies the expected competencies for entry-level CAs whereas, in the past, SAICA prescribed syllabi to be followed by accredited universities or other higher education institutions (paragraph 5.1, page 138). The conclusion was drawn that not only should the subject content requirements and audit competencies be addressed in audit education, but also a number of generic and pervasive skills if change is to be brought to the audit classroom. The main findings noted in paragraph 5.3 (page 142) and paragraph 5.4 (page 158) in chapter 5 (page 138) are revisited next.

8.2.4.1 Auditing and assurance competencies and subject content

Owing to the variety of services (engagements) provided by auditors in practice, the auditing and assurance competencies include several professional competencies informed by the audit subject content which students need to master (paragraph 5.3, page 142). These include:

- Analysing, evaluating and advising on assurance needs;
- Identifying and considering issues related to accepting an engagement;
- Establishing the terms of the engagement;
- Identifying and assessing the key risks for the performance of the engagement;
- Determining which rules, standards or policies to apply to the subject matter being evaluated;
- Developing materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement;
- Designing effective and efficient procedures based on the engagement's scope and the assessed risks;

- Executing the work plan;
- Documenting the results of procedures performed;
- Evaluating the evidence and drawing conclusions;
- Drafting the report upon completion of the engagement;
- Preparing information for meetings with stakeholders;
- Identifying and evaluating the risks pertaining to the financial information system;
- Identifying and documenting the key internal controls (including IT-related controls) implemented in an entity;
- Evaluating internal control;
- Evaluating IT-related elements of internal control;
- Designing, implementing and managing the quality control system in the firm; and
- Identifying and responding to reportable irregularities.

It was established that these competencies are informed by a vast amount of subject content material to be mastered by the audit student. This content covers fields of specialism which include *the legal and regulatory environment governing auditors and their responsibilities, functions and qualities, auditing standards* on the auditor's responsibilities during *the audit process*, and requirements with regard to the performance of *non-audit engagements* (paragraph 5.3, page 142). It was argued that the audit students not only have to master the competencies and subject content requirements, but also acquire a number of generic and pervasive skills in order to function effectively in audit practice. These skills, as prescribed by SAICA, are highlighted again in the paragraph that follows.

8.2.4.2 Generic and pervasive skills

It was shown that SAICA describes these qualities and skills as those that a CA should bring to any task, including ethics and professionalism (affective), personal attributes (behavioural), and professional skills (cognitive) (paragraph 5.4, page 158).

It was noted that *ethics and professionalism* include skills such as (paragraph 5.4.1, page 159):

- Protecting the public interest;

- Acting competently with honesty and integrity;
- Carrying out work with a desire to exercise due care;
- Maintaining objectivity and independence;
- Avoiding conflict of interest;
- Protecting the confidentiality of information;
- Maintaining and enhancing the profession's reputation; and
- Adhering to the rules of professional conduct.

The *personal attributes* that aspiring CAs should possess include (paragraph 5.4.2, page 164):

- Managing oneself, time and change in circumstances;
- Demonstrating leadership and initiative;
- Maintaining and demonstrating competence and recognising limits;
- Striving to add value in an innovative manner;
- Treating others professionally;
- Being a life-long learner; and
- Being able to effectively work in a team.

Professional skills include skills associated with intellectual and technological abilities such as creating, analysing, evaluating and synthesising information and ideas; problem solving and decision-making skills; communication and management skills; and proficiency in technology. It was noted that SAICA requires CA students to be able to demonstrate the following competencies to act professionally in public practice (paragraph 5.4.3, page 168):

- Obtaining information;
- Examining and interpreting information and ideas critically;
- Solving problems and making recommendations;
- Communicating effectively and efficiently;

- Managing and supervising others; and
- Understanding the impact of IT on a CA's daily functions and routines, considering basic legal concepts and understanding the national and international environment.

It was concluded that these generic and pervasive skills are essential for entry level to professional audit practice. In this way, young CAs will be able to function effectively in practice, above and beyond the subject content requirements that are needed to be deemed competent in the field of auditing.

The next paragraph emphasises the way in which the findings and conclusions of chapters 3 to 5, summarised above, were incorporated into the development of the newly developed audit simulation. How and whether the students were able to develop these competency requirements were discussed in chapter 7 (paragraph 7.6.5, page 297) and the main findings are highlighted again later in this chapter (paragraph 8.2.6, page 351).

8.2.5 Establishing a framework for simulation design and developing an audit simulation project and supporting substance

In chapter 6 (page 174), the framework for simulation design established by the author was discussed, as well as the development of the audit simulation project and supporting substance. The latter respectively addressed secondary research objective five and six (paragraph 1.5, page 15). In addressing these secondary research objectives, attention was paid to the general motivation and criticism of simulation use in accounting education (paragraph 6.4.1, page 185), followed by the specific motivation for use of this newly developed simulation in audit education (paragraph 6.4.2, page 186). The chapter concluded with a detailed discussion on how the newly developed simulation was designed (paragraph 6.5, page 188) based on the findings and conclusions from the investigation on the variables in the audit teaching-learning environment. The main findings and conclusions for each of these considerations are highlighted next.

8.2.5.1 Motivation and criticism of simulation use in accounting education

It was mentioned that several studies advocated the use of simulations as active learning tool in accounting and audit education. Each of these studies recognised the advantages that simulation use brings to the audit teaching-learning environment specifically.

Chapter 3 (paragraph 3.2.2.2, page 83) and chapter 6 (paragraph 6.4.1, page 185) highlighted advantages and disadvantages of simulation use, indicating that the advantages for the audit classroom are far more noteworthy than its limitations. The advantages of simulation use were identified as:

- Creating a *positive attitude toward learning*;
- *Inspiring engagement* in the learning process;
- *Encouraging learning*;
- Providing *opportunities for integration and application learning*;
- Bringing an *element of business reality* to the classroom;
- *Reducing issues of slacking* that is caused by traditional teaching methods;
- Providing *soft-skill practice* that includes *teamwork, collaboration and interpersonal social skills*;
- *Stimulating students and motivating* them to participate to a greater extent than in a conventional classroom situation;
- *Increasing the ability to recall factual knowledge*;
- *Improving problem solving skills*; and
- Ensuring participants are *actively engaged* in the learning process, which *enhances learning effectiveness*.

The disadvantages of simulations included the following (paragraph 3.2.2.2, page 83):

- *Time constraints*;
- *Possible confusion* from a student perspective about what is expected of them;
- *Frustration* from a student perspective about *technical difficulties* in the simulation; and
- *Difficulty* from a lecturer's perspective to *provide feedback and answer questions* when the simulation takes place outside of class time.

Based on these findings from the literature, it was concluded that the development of a new simulation, which is up to date with the requirements for conducting audits in practice, will contribute to bringing change to audit education, despite the mentioned disadvantages. This

conclusion was supported by the findings of the empirical study, because the newly developed audit simulation did indeed prove to be an instrument that (paragraph 7.6.6, page 308 to paragraph 7.6.8, page 319):

- Created a positive attitude toward learning;
- Inspired engagement in the learning process;
- Encouraged learning;
- Provided opportunities for integration and application learning;
- Brought an element of business reality to the classroom;
- Provided soft-skill practice that included teamwork, collaboration and interpersonal social skills;
- Increased the ability to recall factual knowledge;
- Improved problem solving skills; and
- Actively engaged participants in the learning process, which enhanced learning effectiveness.

It was noted from the empirical findings in chapter 7 (paragraph 7.6.6.2, page 309 and paragraph 7.6.8.2, page 320) that all the identified disadvantages or challenges, except for the time constraints, were mitigated by the newly developed audit simulation. Although the simulation was time consuming, the findings showed that it did not hinder the learning process of the students.

8.2.5.2 Specific motivation for use of the newly developed simulation in audit education

In line with the findings and conclusions on the variables in the audit teaching-learning environment from chapters 3 to 5, it was concluded that the newly developed simulation will indeed aid in establishing an effective overall audit teaching-learning environment and lead to change in the approach to audit education, if these findings and conclusions are included. The findings and conclusions from chapter 6 (paragraph 6.4.2.1 to paragraph 6.4.2.3) as to how the newly developed audit simulation will aid in the process of changing the approach in audit education are highlighted next:

The audit simulation will assist audit lecturers, because it:

- Contributes to continuing the development of attributes that form part of their personality in order to enrich student learning;
- Enables affective communication and incorporates social media as a means of communication between themselves and their students;
- Motivates students by applying methods that support intrinsic rather than extrinsic behaviours and that are more student oriented and responsive to student needs and concerns;
- Enhances their ability to show commitment to a process of CPD to remain knowledgeable, well informed, and able to discuss recent developments in the field;
- Aids in preparing for lectures and give them the opportunity to use new technologies in presenting lectures;
- Results in a teaching methodology that will meet the audit students' needs, enhance student understanding of the audit subject content, and develop important skills such as critical thinking, problem solving and other soft skills;
- Enables them to assess the knowledge level of students on a continuous basis and not just in a summative evaluation; and
- Sets the audit classroom as a milieu that replicates audit practice by means of applying experiential learning techniques such as simulations.

The audit simulation will assist audit students, because it:

- Aids in establishing a positive perception of the variables in the teaching-learning environment and results in a greater probability that students would apply a deep learning approach;
- Contributes to achieving high-quality learning outcomes such as critical thinking; and
- Eliminates the negative impact of endogenous and exogenous factors on student achievement.

The audit simulation will assist in incorporating the subject content and competency requirements, because it:

- Incorporates the majority of the subject technical content requirements;
- Aids in developing the competencies required in the auditing and assurance specialism; and
- Aids in developing the generic and pervasive skills required from audit students after graduation and before entering professional practice.

These specific motivations were incorporated into the development of the new audit simulation after establishing the framework for the simulation design, which is discussed next.

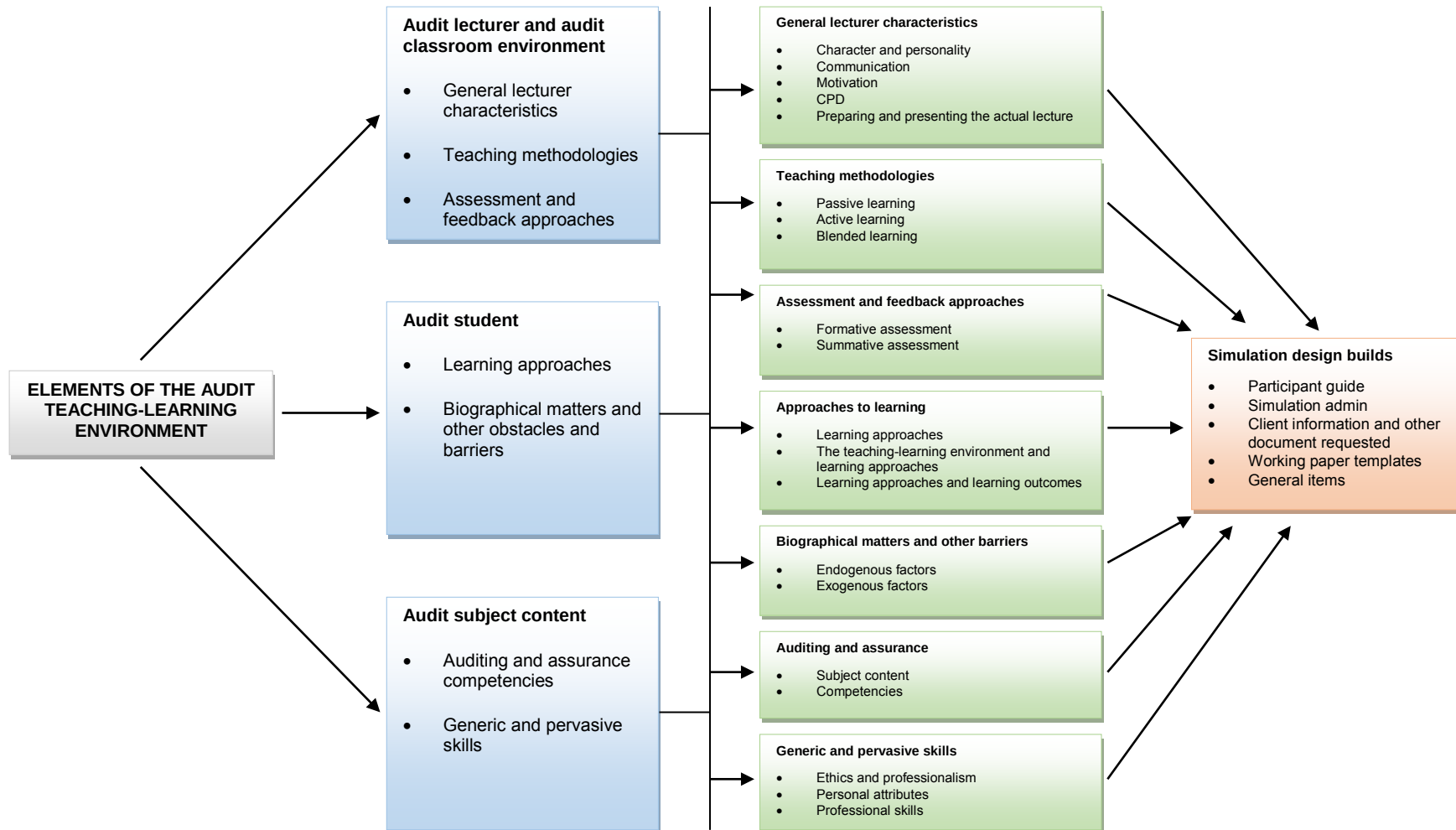
8.2.5.3 Simulation design

It was noted from the literature (paragraph 6.5, page 188) that the development of an audit simulation should be based on a set framework that:

- Specifies all the relevant variables that need consideration;
- Ensures that the research in developing simulations in general is organised systematically; and
- Mitigates issues that would result in ineffective development and practice.

After the extensive literature review in chapters 1 to 5, as well as in part of the introduction to chapter 6, the author could not identify a framework for simulation design that incorporates **all** the variables in the **overall audit teaching-learning environment**. The author, therefore, designed a framework for simulation design which included the findings and specific motivations stated earlier (paragraph 8.2.5.2, page 347) on all the variables in the audit teaching-learning environment. In doing so, the fifth secondary research objective (paragraph 1.5, page 15) was addressed. Figure 8-3 illustrates the framework for simulation design developed by the author.

Figure 8-3: Framework for simulation design



(Source: Author, figure 6-1, paragraph 6.5, page 188)

Figure 8-3 shows how all the findings and specific motivations stated earlier (paragraph 8.2.5.2, page 347) on all the variables in the audit teaching-learning environment were incorporated in establishing the five primary builds that constitute the newly developed audit simulation. Each of these builds, their relevance and how they were used to incorporate all the findings and specific motivations were discussed in detail in chapter 6 (paragraph 6.5, page 188).

The empirical findings and research methodology followed in obtaining the results are returned to next. A conclusion is drawn then as to whether the newly developed audit simulation did indeed address all the variables in the audit teaching-learning environment.

8.2.6 Evaluating whether a newly developed audit simulation would assist in enhancing the audit students' perceived broad competence

The seventh secondary research objective (paragraph 1.5, page 15) was to evaluate whether a newly developed audit simulation would assist in enhancing the audit students' perceived broad competence. The research methodology and the empirical findings of the evaluation were discussed in chapter 7 (page 248 to page 323) and a summary is provided next of the research methodology (paragraph 8.2.6.1, page 351) and the empirical findings of this study (paragraph 8.2.6.2, page 354). This is followed by a conclusion, based on the empirical findings of the thesis, on whether the newly developed audit simulation addressed all the elements of the audit teaching-learning environment (paragraph 8.2.6.3, page 364).

8.2.6.1 The research methodology in the evaluation process

The mixed research methodology was applied based on the findings of chapter 2 (paragraph 2.5, page 50), where the advantages of using this type of methodology were discussed. The research in this study was conducted in the pragmatic paradigm so as to allow, first, for some amount of generalisation, usually associated with the positivist paradigm, by applying deductive reasoning and, secondly, for context consideration, typically related to the interpretivist paradigm, by applying inductive reasoning (paragraph 7.2, page 249). The qualitative and quantitative methods used in this research methodology were applied consecutively which successfully allowed the quantitative findings to be informed by the qualitative results (paragraph 7.2, page 249).

First, a quantitative study applying the classic quasi-experimental (pre-test/post-test) design was performed after consultation with the Statistical Consultation Services of the North-West

University (Potchefstroom Campus). They confirmed that this form of experimental design would constitute a reliable and valid methodology to determine whether the newly developed audit simulation would assist in enhancing the audit students' perceived broad competence, by means of a quantitative analysis (paragraph 7.2, page 249). The population consisted of all the third-year audit students in the CA programmes of two SAICA-accredited South African universities (University X and University Y) (paragraph 7.3, page 251). Non-random sampling was, therefore, applied.

The third-year audit students in the CA programmes at both University X (the experimental group) and University Y (the control group) were asked to complete the pre-test questionnaire at the same time at the campuses of the universities (paragraph 7.4, page 255). The experimental group (University X) was then asked to complete the audit simulation over a period of ten weeks and to submit the completed simulation at the end of this period, whereas the control group continued with their normal lectures in auditing without completing the audit simulation (paragraph 7.4, page 255). The post-test questionnaire was then completed by students in both the experimental and control group within one week after the experimental group had completed the simulation (paragraph 7.4, page 255).

A comprehensive pre-existing questionnaire could not be found, and a new instrument was developed by the author. The questions were framed by referring to the secondary objective to be met by empirical means and consisted of close-ended questions on a five-point Likert scale. These questions measured the students' views on whether the teaching methodology applied in the audit classroom effectively assisted and enabled them to be deemed competent in auditing and assurance and the generic and pervasive skill competencies. The students' attitude toward the audit simulation was also tested quantitatively by including an adjusted attitude measure developed by Noyes and Garland (2005:234) into the post-test questionnaire (paragraph 7.5, page 256).

The quantitative data was analysed by the Statistical Consultation Services of the North-West University (Potchefstroom Campus) by using the computer software IBM SPSS (SPSS, 2011). The construct validity (by performing an exploratory components factor analysis) and the reliability were also confirmed. This was especially important for a newly developed instrument. The results of this analysis were indicated in table 7-8 in chapter 7 (paragraph 7.5, page 256), which led to the following conclusions on the validity and reliability of the pre-test questionnaire results:

- The Cronbach alpha coefficient ranged between 0.706 and 0.978 for all competencies (≥ 0.70);
- The average inter-item correlations were larger than 0.15;
- The percentage of the variance explained by the first factor was more than 50% in all circumstances;
- The scree test confirmed that only one factor was appropriate in all circumstances; and
- No questions, except for one, reported a slightly lower communality (0.298) than the recommended minimum level of 0.3.

The threats to the validity and reliability of the questionnaire were further mitigated in that the questions were examined by a number of experienced research and audit academic professionals at University X and a qualified statistician at the Statistical Consultation Services of the North-West University (Potchefstroom Campus) (paragraph 7.5, page 256). In addition, separate meetings were arranged with five students, not taking part in the experiment, who were considered to have the same knowledge and competence level of the participants (paragraph 7.5, page 256). The questionnaires were discussed with these students to determine whether they understood the intention of the author. A few alterations were made based on these discussions before the pre-test and post-test questionnaires were administered to the participants (paragraph 7.5, page 256). Based on these findings which proved the reliability and validity of the pre-test questionnaire, the same questionnaire was applied for the post-test, with the inclusion of the attitude measure (paragraph 7.5, page 256).

Secondly, a qualitative approach was followed, based on the phenomenological theoretical framework and usually associated with an interpretivist paradigm. Focus group discussions were held with the students after completion of the quantitative data-gathering process in order to achieve a triangulation of results (paragraph 7.2, page 249). In doing so, the validity and reliability of the quantitative findings were enhanced and a better understanding was obtained of whether a newly developed audit simulation would enhance the perceived broad competence of audit students (paragraph 7.2, page 249).

The sample population of the focus groups consisted of the experimental group. The whole experimental group were invited to join the focus group discussions to limit bias results (paragraph 7.5, page 256). The number of volunteers amounted to 61, which resulted in eight focus group discussions which were held within one week after completion of the newly

developed audit simulation. Each focus group consisted of six to eight students (paragraph 7.5, page 256) from different races, cultures, and genders.

After the first five focus group discussions, it appeared that the point of saturation had been reached (paragraph 7.5, page 256). However, it was decided to conduct the remaining three focus group discussions as planned to limit bias results and give all the volunteers an opportunity to participate (paragraph 7.5, page 256). It was therefore determined that the focus groups were a true representation of the sample population.

After obtaining permission from the participants in all the groups, all discussions were voice-recorded, independently transcribed and content analysed by means of ATLAS.ti after multiple readings, during which a number of themes were identified (see paragraph 7.6.6 and 7.6.8). The questions posed to the focus groups (paragraph 7.5, page 256) were framed with the aim to inform the findings of the quantitative study (paragraph 7.6.5, page 297) and to evaluate the audit simulation (paragraph 7.6.8, page 319). It was also concluded that the study was performed on an ethically sound basis (paragraph 7.5.2, page 263).

A summary is presented next of the empirical findings which were obtained by applying this mixed methodology, as discussed in chapter 7 (paragraph 7.6, page 266).

8.2.6.2 Empirical findings

The quantitative analysis was discussed first. The results were provided of the t-tests for the effect of biographical factors on students' perception as to whether the current teaching methodology applied in the audit classroom assisted them in achieving competence in auditing and assurance and generic and pervasive skills (paragraph 7.6.1, page 266). The effect of these factors on the academic achievement in auditing followed (paragraph 7.6.2, page 274), after which descriptive statistics were provided on students' perception as to the effectiveness of the current teaching methodology in assisting them to master the set competencies for auditing and assurance (paragraph 7.6.3, page 279) and generic and pervasive skills (paragraph 7.6.4, page 291). These descriptive statistics were obtained from the pre-test questionnaire.

A discussion followed on the t-test which determined the effect of the simulation project on the audit students' perceived broad competence (paragraph 7.6.5, page 297), by means of applying the quasi-experimental (pre-test/post-test) design. The results were also analysed of the focus group discussions, which informed the results of the quantitative findings (paragraph 7.6.6, page 308). This was followed by a conclusion (paragraph 7.6.7, page 317) on the seventh secondary research objective (paragraph 1.5, page 15). The analysis of the

results ended with a discussion on how the students evaluated the audit simulation (paragraph 7.6.8, page 319).

The biographical information of the participants in the experiment were described as part of the discussion on the sample population (paragraph 7.3, page 251). The following conclusions were drawn from this information, as illustrated in paragraph 7.3, (tables 7-2 to 7-7, pages 251 to 255):

- Students from both universities were well presented in the study (table 7-2);
- Both gender groups were sufficiently presented (table 7-3);
- The majority of the respondents consisted of black and white audit students (table 7-4);
- The majority of the students had an African language or Afrikaans as mother tongue (table 7-5);
- Basically the entire population consisted of students enrolled full-time in a CA qualification at the universities (table 7-6); and
- The practical experience level of these students, therefore, was in line with expectations, because they were enrolled full-time (table 7-7).

The first t-test determined the effect of students' biographical backgrounds on their perception of how effective the current teaching methodology was in assisting them to be deemed competent in the auditing and assurance and generic and pervasive skills competencies. It was concluded in tables 7-9 to 7-13 (paragraph 7.6.1, pages 266 to 274) that none of the biographical variables had any significant effect on their perception. It was highlighted that this finding was not in line with those of other researchers in the field of education in general such as Abhayawansa and Fonseca (2010:545), Dart *et al.* (2000:269) and Lizzio *et al.* (2002:43), who concluded that the perceptions of students on the teaching-learning environment, including the teaching methodology applied by the lecturer, are indeed influenced by their biographical background (paragraph 4.2.1, page 111).

It was further cautioned to not overgeneralise these results, because non-random sampling was used to obtain the participants. Finally, it was argued that this finding could indicate that the biographical backgrounds of students might not have an effect on their actual academic performance in the audit subject, which was noted to be the case from the literature (paragraph 4.2.2, page 124), and that further research in this regard was necessary. The author, therefore, deemed it appropriate to determine whether any of the biographical

variables considered earlier in tables 7-9 to 7-13 (paragraph 7.6.1, pages 266 to 274) did, in fact, have any effect on the academic performance of the participants.

From table 7-14 (paragraph 7.6.2, page 274), the following was noted with regard to the effect of biographical background on academic achievement in the audit subject:

- Gender and level of practical experience did not seem to have a significant effect on academic achievement; and
- Differences in race, enrolment status and mother tongue appear to have had a significant effect on how the students performed in the audit subject.

It was concluded that the findings of gender and practical experience on the academic performance of students showed both equal and opposite results to other findings noted from the literature (paragraph 4.2.2.1, page 125). The results on gender were in line with other studies in the field of accounting education by various researchers such as Barnes *et al.* (2009:51), Byrne and Flood (2008:208) and De Hart *et al.* (2011:180) (paragraph 7.6.2, page 274). On the other hand, the effect of practical experience on the audit students' academic achievement, proved to be in contrast with the results from studies by, among others, De Hart *et al.* (2011:180) and Gul and Fong (1993:39) (paragraph 4.2.2.1, page 125). Yet again, it was cautioned to not overgeneralise these findings due to non-random sampling as well as the fact that the participants had a very low level of practical experience (paragraph 7.3, page 251).

The effect of race, enrolment status and mother tongue differences on the academic achievement of audit students was found to corroborate or contrast the findings in other studies where it was established that (paragraph 4.2.2.1, page 125):

- Gender has either a significant impact on the academic performance of students (Huysamen, 2000:146) or no significant impact at all (Baard *et al.*, 2010:138), specifically in a South African context. Thus, it was recommended to determine whether race also affects the students' performance in other subjects in the accounting education field and to obtain the reasons for this phenomenon;
- Enrolment status could have an effect on students' academic performance in general, but it definitely seems evident in the audit subject specifically (Katsikas & Panagiotidis, 2011:160);
- Studying in one's mother tongue presents an advantage to academic achievement (Barnes *et al.*, 2009:50; Crawford & Wang, 2014:436; De Hart *et al.*, 2011:181); and

- A link might exist between these findings and those found earlier with regard to the race of the students but, as the purpose of the study was not to determine this, no further research was conducted to test this hypothesis.

Next, the descriptive statistics on the auditing assurance competencies presented in table 7-16 (paragraph 7.6.3, page 279) indicated that students felt that the teaching methodology applied in the audit classroom in general was not effective enough to enable them to be competent in the audit subject. The competencies in which the students felt more competent, although not showcasing acceptable perceived competence levels, included (table 7-16, paragraph 7.6.3, page 279):

- Identifying and considering issues related to accepting an engagement (paragraph 7.6.3.2, page 282);
- Establishing the terms of the engagement (paragraph 7.6.3.3, page 283);
- Evaluating and assessing the key risks on the performance of the engagement (paragraph 7.6.3.4, page 283);
- Developing materiality guidelines to inform the direction and extent of assurance work, based on the scope and expectations of the engagement (paragraph 7.6.3.8, page 286);
- Identifying and evaluating the risks pertaining to the financial information system (paragraph 7.6.3.5, page 284); and
- Identifying and documenting the key internal controls (including IT-related controls) implemented in an entity (paragraph 7.6.3.5, page 284).

The students indicated the biggest lack of perceived competence in the following (table 7-16, paragraph 7.6.3, page 279):

- Analysing, evaluating and advising on assurance needs (paragraph 7.6.3.1, page 281);
- Determining which rules, standards or policies to apply to the subject matter being evaluated (paragraph 7.6.3.7, page 286);
- Designing effective and efficient procedures based on the engagement's scope and the assessed risks (paragraph 7.6.3.9, page 287);
- Executing the work plan (paragraph 7.6.3.10, page 287);
- Documenting the results of procedures performed (paragraph 7.6.3.11, page 288);

- Evaluating the evidence and drawing conclusions (paragraph 7.6.3.12, page 288);
- Drafting the report upon completion of the engagement (paragraph 7.6.3.13, page 289);
- Preparing information for meetings with stakeholders (paragraph 7.6.3.14, page 289);
and
- Designing, implementing and managing the quality control system in the firm (paragraph 7.6.3.15, page 290).

The overall perception of the students was that the teaching methodology applied in their audit classrooms did, to a greater extent, assist them in the theoretical aspects of the audit subject content, although room for improvement was indicated. This stood in contrast to the application of these theoretical components in practice, which is a skill needed to be deemed competent in the various competencies of auditing and assurance.

Furthermore, this finding confirmed the arguments of various researchers such as Barac (2012:48), Steenkamp and Von Wielligh (2011:9), Siegel *et al.* (1997:217) and Adler and Milne (1997b:110-116), as noted in chapter 1 (paragraph 1.1, page 1). These researchers stressed the fact that accounting courses still overemphasise the technical substance of the accounting subjects, more specifically auditing, and that not enough scope is being created for the development of crucial skills for auditing practice. Thus, it was concluded that the approach followed currently by universities and other higher education institutions still results in a knowledge-to-practice-application barrier, as discussed in the introduction to this study (paragraph 1.1, page 1), and that this barrier could hinder students especially in successfully applying themselves when entering professional audit practice.

Next, the descriptive statistics were provided regarding the generic and pervasive skill competencies (table 7-17, paragraph 7.6.4, page 291). It was noted that the teaching methodology currently applied in the audit classroom did enable students to feel competent, to a great extent, with regard to ethical behaviour and professionalism; to a lesser extent, with regard to personal attributes and, to the least extent, with regard to professional skills.

With regard to *ethical behaviour and professionalism*, it was found that the current teaching methodology will produce students who will enter practice with the ability to (table 7-18, paragraph 7.6.4.1, page 291):

- Act with integrity, honesty and objectivity in performing their work;
- Maintain their independence;

- Avoid conflicts of interest;
- Protect the confidential information of clients that they will gain access to;
- Maintain and enhance the profession's reputation; and
- Adhere to the rules of professional conduct.

Although some *personal attribute* skills showed relatively higher levels of perceived competence, still not particularly sufficient, some personal attributes indicated that the teaching methodology should be modified so as to give students more opportunities to develop skills such as (table 7-19, paragraph 7.6.4.2, page 293):

- Applying self-management;
- Demonstrating leadership;
- Demonstrating initiative;
- Striving to add value in an innovative manner;
- Managing change; and
- Managing time effectively.

Finally, regarding the *professional skills*, the following showed the lowest level of perceived competence, in relation to the other skills which also showed a need for improvement, and which could be a direct result of the current teaching methodology applied in the audit classroom (table 7-20, paragraph 7.6.4.3, page 294):

- Performing complex computations;
- Preparing documents;
- Presenting information effectively;
- Planning projects;
- Managing projects;
- Facilitating decision making;
- Leading effective meetings;

- Supervising others;
- Considering basic legal concepts; and
- Understanding the national and international environment.

From these findings with regard to generic and pervasive skills competencies, it was concluded that, as in the case of the auditing and assurance competencies, there was also room for improvement in the methodology applied in the audit classroom in developing these soft skills in students, specifically for the competencies relating to personal and professional skills. This conclusion was found to be in line with the findings of Valadas *et al.* (2010:262-263), as noted in chapter 1 (paragraph 1.1.3, page 7), which highlighted the fact that definite improvement is needed in the current methodology followed to develop the audit student into a successful entry-level professional auditor. Furthermore, this finding confirms the call for change in the teaching approach in auditing from the accounting profession, as stated in chapter 1 (paragraph 1.1.3, page 7).

Finally, based on the above descriptive statistics, it was concluded that the audit education approach that has been followed to date still requires change which, once again, confirms the author's argument in the problem statement (paragraph 1.3, page 15).

In testing whether the audit simulation actually improved the perceived broad competence of the participants, the following observations were made (paragraph 7.6.5, page 297):

- A positive effect was found on the audit students' perceived competence levels in audit and assurance and the generic and pervasive skills competencies (tables 7-22 and 7-23, paragraph 7.6.5.2, page 300); hence, enhancing the audit students' perceived broad competence; and
- A greater effect was indicated on the audit students' perceived broad competence and the audit students' understanding of the audit process as a whole, in relation to just attending normal lectures in the audit subject (table 7-24, paragraph 7.6.5.3, page 305).

The following was also noted from the results (paragraph 7.6.5, page 297):

- The findings of researchers such as Steenkamp and Rudman (2007:23), Hosal-Akman and Simga-Mugan (2010:251), and Steenkamp and Von Wielligh (2011:9), as stated in chapter 6 (paragraph 6.2, page 179), are supported. These researchers claimed that courses in accounting degrees frequently apply dated methods, for example, a passive learning approach;

- The fact that the audit simulation had a greater effect on the students' perceived competence levels than merely attending normal lectures (passive approach) during the experimental period, also confirmed the argument made by Siegel *et al.* (1997:218), who stated that a passive technique of conveying auditing theory to untried young auditors results in poor achievement when their audit knowledge is tested (paragraph 6.2, page 179); and
- The problem statement of this study, as noted in chapter 1 (paragraph 1.3, page 15), is further supported because the control group who was taught by a passive approach still indicated a lower perceived competence level than their counterparts in the experimental group who were actively involved in the learning process during the audit simulation.

It was concluded that the implementation of simulations, such as the one developed and tested in this study, could indeed assist in bringing the required change to the audit classroom and audit education in general.

The focus group discussions (paragraph 7.6.6, page 308) yielded the reasons for the students' feelings of competence in auditing and assurance and in the generic and pervasive skill competencies (i.e. informing the quantitative findings of the study). From the findings, it was evident that the newly audit simulation proved to be an instrument that:

- Gave students the opportunity to obtain a holistic view of the audit process (paragraph 7.6.6.1, page 308);
- Ensured sufficient communication between the audit lecturer and the student (paragraph 7.6.6.2, page 309);
- Actively involved the students in the learning process (paragraph 7.6.6.3, page 310);
- Gave students the prospect of benefitting from the advantages of group work (paragraph 7.6.6.4, page 311);
- Assisted students in visualising audit theory in practice (paragraph 7.6.6.5, page 311);
- Ensured effective and sufficient feedback was obtained (paragraph 7.6.6.6, page 312);
- Replicated audit practice (paragraph 7.6.6.7, page 313);
- Gave students the opportunity to work with a diverse group of individuals and learn from one another (paragraph 7.6.6.8, page 313); and

- Served as a platform for the students to develop various soft skills (paragraph 7.6.6.9, page 314).

The findings from the focus group discussions also confirmed the arguments of various researchers stated throughout this thesis. These include:

- The students felt that the use of social media (Facebook) assisted in their learning process (paragraph 7.6.6.2, page 309) and they enjoyed using Facebook. This concurred with the findings of Bosch (2009:185) and Barnes *et al.* (2007), stated in chapter 3 (paragraph 3.2.1.2, page 69). This finding also proved that one of the disadvantages of using simulations, as noted in chapter 3 (page 83) and chapter 6 (page 185), was mitigated, namely that educators struggle to provide feedback and answer questions when the simulation takes place outside of class time;
- The students' feeling that they were actively involved in the learning process, which assisted them in seeing how an audit is actually performed (paragraph 7.6.6.3, page 310), supported the findings of Cox *et al.* (2013:651), Everly (2013:151), Lubwama *et al.* (2013:400) and Steenkamp and Von Wielligh (2011:18), as noted in chapter 3 (paragraph 3.2.2, page 80). These researchers concluded that the use of this method contributes significantly to the learning experience of students and their ability to grasp important concepts;
- The statements that working as part of a group helped their learning (paragraph 7.6.6.4, page 311) agreed with the theories on applying cooperative learning techniques in the classroom environment, as stated in chapter 3 (paragraph 3.2.2.2, page 83);
- The fact that the students were able to visualise the theory in practice (paragraph 7.6.6.5, page 311) made the work interesting and understandable. These advantages of visual aids in teaching were argued in chapter 3 (paragraph 3.2.2.2, page 83) by researchers such as Moore and Scevak (1997:205) and Schmidt (2009:68);
- The findings of this study further supported the advantage of sufficient and effective feedback to learning (paragraph 7.6.6.6, page 312), as shown by Gawe *et al.* (2012:283) and Moore (2012:235). The students indicated that the feedback obtained as part of the simulation process assisted them in seeing what they did not understand correctly during the simulation and how certain tasks should be performed. It was, therefore, concluded that the feedback guided improvement, helped students to identify difficulties and gave them the opportunity to correct their errors (paragraph 3.2.3, page 97);

- The students felt that the simulation indeed replicated audit practice which, in turn, gave them the opportunity to be part of a real audit experience. In this way, they gained a better understanding of how auditing theory should be applied in practice (paragraph 7.6.6.7, page 313). This, again, emphasised the need for changing the audit classroom to represent the actual audit environment. These findings were found to be in line with the conclusions reached in chapter 3 (paragraph 3.3, page 103), which stated that audit lecturers should attempt to alter the audit classroom setting, by implementing more experiential learning techniques, such as simulations and games, to bring audit practice to the classroom;
- The study found that working with a diverse group of individuals helped the students in various ways (paragraph 7.6.6.8, page 313). This proved that some of the variables affecting the student identified in chapter 4 (paragraph 4.2.2, page 124), such as race and ethnicity, mother tongue and personal characteristics, can be mitigated by lecturers if they consider these factors when attempting to bring change to the audit classroom; and
- Finally, the simulation proved to be an instrument which gave students the opportunity to develop various soft skills (paragraph 7.6.6.9, page 314) and to obtain a holistic view of the audit process (paragraph 7.6.6.1, page 308). The conclusion was drawn that some of the current criticisms to audit education, noted in chapter 6 (paragraph 6.2, page 179), could be addressed by applying more teaching tools in the audit classroom such as the simulation developed in this study.

In light of the above, it is clear that the empirical evaluation of the newly developed audit simulation and the students' attitude toward the audit simulation were positive, as indicated in table 7-25 (paragraph 7.6.8.1, page 319). This is evident in the fact that the students found the audit simulation particularly *good*, *comfortable*, *fresh* and *understandable*, and that they had a worthwhile experience by indicating that the audit simulation was *exciting* and *pleasant*. It was concluded that these feelings associated with the students feelings that the audit simulation was *likeable* and that it brought a sense of *happiness* and *calmness* to them while participating in the simulation.

From the focus group discussions, the following was mentioned by the students as contributing factors to their positive attitude toward the audit simulation (paragraph 7.6.8.2, page 320):

- Social media such as Facebook were incorporated into the simulation;
- The audit simulation was well structured and developed; and
- They received opportunity to work in audit teams.

The following was noted as elements, which if it were considered more carefully, might have made their experience even more positive:

- The simulation was performed during the second semester with full curriculum content, which put additional pressure on the participants; and
- The financial implications of submitting a complete simulation in hard copy were deemed to be not worth the academic benefit, because it contributed only 10% to their final mark.

Finally, it was argued that the measurement of the students' attitude toward the audit simulation, yet again, proved to have given valuable insights on measuring students' attitude toward an object applied as educational tool, as indicated by Fouché (2006:154) and Van Der Merwe (2013:152). These researchers evaluated students' attitude toward the respective teaching tools they developed for use in accounting education in general (paragraph 7.6.8.1, page 319).

In the next paragraph, a conclusion is drawn as to whether the newly developed audit simulation addressed all the elements of the audit teaching-learning environment.

8.2.6.3 The effect of the newly developed audit simulation on the audit teaching-learning environment

The specific motivations for incorporating the variables into the newly developed audit simulation were identified and stated in chapter 6 (paragraph 6.4.2, page 186) and highlighted again earlier (paragraph 8.2.5.2, page 347).

From the empirical findings discussed in detail in chapter 7 (paragraph 7.6, page 266) and summarised in this chapter (paragraph 8.2.6.2, page 354), it can be concluded that:

The audit simulation assists audit lecturers, because it:

- Helps them to be deemed effective by the students, seeing that it enabled affective communication and incorporated social media as a means of communication between themselves and their students (paragraph 7.6.6.2, page 309). It also motivates students because methods are applied that support intrinsic rather than extrinsic motivational behaviours which are more student oriented and responsive to student needs and concerns than extrinsic motivational behaviours (paragraph 7.6.8.2, page 320);
- Produces a teaching methodology that meets the audit students' needs (paragraph 7.6.8, page 319), enhances their understanding of the audit subject content (paragraph 7.6.5, page 297 to paragraph 7.6.6, page 308) and helps them develop important soft skills such as critical thinking and problem solving (paragraph 7.6.5, page 297 to paragraph 7.6.6, page 308);
- Enables them to assess the knowledge level of students continuously and not just in a summative evaluation (paragraph 7.6.6.6, page 312); and
- Transforms the audit classroom into a milieu that replicates audit practice by means of applying experiential learning techniques such as simulations (paragraph 7.6.6.7, page 313).

The audit simulation assists audit students, because it:

- Aids in establishing a positive perception of the variables in the teaching-learning environment and results in a greater probability that students will apply a deep learning approach (paragraph 7.6.8, page 319);
- Contributes to achieving high-quality learning outcomes by not only obtaining a better understanding on the subject content, but also being able to apply knowledge which results in higher-quality learning outcomes and the development of important generic and pervasive skills (paragraph 7.6.5, page 297 to paragraph 7.6.6, page 308); and
- To an extent, eliminates the negative impact of some of the endogenous and exogenous factors that impact on student achievement (paragraph 7.6.6.8, page 313 to paragraph 7.6.6.9, page 314).

The audit simulation assists in incorporating the subject content and competency requirements, because it:

- Aids in developing the competencies required in the auditing and assurance specialism (paragraph 7.6.5, page 297 to paragraph 7.6.6, page 308); and
- Aids in developing the generic and pervasive skills required from audit students after graduation and before entering professional practice (paragraph 7.6.5, page 297 to paragraph 7.6.6, page 308; paragraph 7.6.6.9, page 314).

Based on these findings, it can be concluded that the newly developed audit simulation indeed addresses all the elements of the audit teaching-learning environment.

The proving of the hypothesis in this study is explained below.

8.3 Proving the hypothesis

The hypothesis tested in this study was formulated as:

The implementation of a comprehensive audit simulation, which addresses all the variables in the audit teaching-learning environment,¹ in audit curricula at universities or other higher education institutions, will enhance² the perceived broad competence³ of audit students.

¹ The first part of the hypothesis was proven to be correct due to the fact that the audit simulation proved to be an instrument which addresses all the elements of the audit teaching-learning environment (paragraph 8.2.6.3, page 364);

² The perceived broad competence of the participating students at a SAICA-accredited university was enhanced, which proves the second part of the hypothesis to be correct because (paragraph 7.6.5, page 297 to paragraph 7.6.6, page 308):

- The audit students' perceived competence in auditing and assurance *significantly increased* after they had completed the audit simulation;
- The audit students' perceived competence with regard to several generic and pervasive skill competencies *significantly increased*; and
- The audit students' perceived broad competence *increased significantly more* than the students who did not partake in the experiment.

³ The audit students' perceived competence was enhanced with regard to *not only* the auditing and assurance competencies, but *also* the variety of generic and pervasive skill competencies. Thus, their perceived *broad competence* was improved, which proves the last part of the hypothesis correct.

Therefore, all three elements of the hypothesis were present in this study, and from this discussion it can be concluded that the hypothesis tested in this study was proven correct and can be accepted.

8.4 Recommending the way forward for audit education

The last secondary research objective of this study was to make recommendations on how the call to bring change to the audit classroom can be answered (paragraph 1.5, page 15).

The next few paragraphs state the recommendations based on the findings and conclusions regarding each of the secondary research objectives and the conclusion drawn on the hypothesis tested, proven and accepted in the thesis. These recommendations are also informed by the conclusion on the overall primary research objective, as stated later in this chapter (paragraph 8.5, page 372). In doing so, the eighth, and last, secondary research objective, as noted in chapter 1 (paragraph 1.5, page 15), is addressed.

8.4.1 Recommendations on the way forward for the novice accounting education researcher

From the findings in chapter 2 (paragraph 2.1, page 26 to paragraph 2.5, page 52) on conducting research and interpreting results, the following can be recommended to assist in bringing change to audit education. It involves maximising the research contributions in accounting education and developing the novice accounting education researcher into an established, well-rounded scholar in this field:

- The novice accounting education researcher should make an effort to understand that research in accounting education, as in any research field, has a philosophical perspective, and involves thinking about assumptions as to how one observes the social world;
- It is, therefore, imperative that the researcher embarks on any research project in accounting education by determining his or her own views on the phenomena under investigation (ontology), whether from a realist perspective, where an external reality

exists objectively from the researcher, or from a relativist perspective, where reality depends on various situations and factors;

- The ontological position should then translate to epistemology where the questions regarding the researcher's views of knowledge (i.e. how the researcher came to know about the phenomenon) are determined. This knowledge can either be based on the experience of the senses which can be observed inside or outside of the classroom setting or be seen as multi-layered and complex where a single phenomenon, such as inexperienced audit students' struggle to master the robust volume of study material, can be understood in numerous ways;
- The outcome of the epistemology decisions should determine the research paradigm in which the accounting education researcher conducts research to obtain an understanding of the observed phenomenon;
- This should be followed by the decision on how the accounting education researcher can go about obtaining the required knowledge (methodology), either through forming a hypothesis (deductive) to be tested, or drawing general conclusions based on repeated observations (inductive); and
- Only then should the accounting education researcher select the method of data collection pertaining to the specific research paradigm, whether it be in the form of a questionnaire, focus group discussion, interview or a combination thereof.

By following this process, the novice accounting education researcher can start the process of addressing the problems in audit education and, consequently, of closing the gap between researchers and practitioners in research and accounting education.

8.4.2 Recommendations with regard to the audit lecturer and the audit classroom

As the audit lecturer has control over the majority of the variables in the audit teaching-learning environment, the following can be recommended to assist in the process of bringing change to audit education, as noted from chapter 3 (paragraph 3.1, page 55 to paragraph 3.3, page 103):

- Be aware of the impact of their characteristics and personality on student achievement and continue to develop or improve personal attributes so as to enrich student learning;

- Ensure effective communication by incorporating social media as a means of communication between themselves and their students, because these could:
 - Assist in establishing the credibility of the lecturer (ethos) from a student perspective;
 - Stimulate the desire of students to learn, seeing that they are familiar with technological methods of communication (pathos);
 - Serve as a medium by which the content of the subject can be communicated (logos); and
 - Bridge issues such as individualism, collectivism and the language proficiency levels of students.
- Motivate students by applying methods that support intrinsic rather than extrinsic motivational behaviours and that are more student oriented and responsive to student needs and concerns;
- Show a greater commitment to a process of CPD in order to remain knowledgeable, well informed, and able to discuss recent developments in the field;
- Be open to new technologies in presenting their lectures. This will contribute not only to their CPD, but also to ensuring that they remain effective, because the use of new technologies could:
 - Motivate students;
 - Encourage their participation in the classroom; and
 - Ultimately, add in stimulating the learning experience.
- Apply a teaching methodology that will meet the audit students' needs, enhance student understanding of the audit subject content and develop important soft skills such as critical thinking and problem solving by:
 - Admitting to the limits of a passive learning methodology and to the advantages of active and blended learning methods; and
 - Not being confined to a passive approach due to time limitations, among other factors.

- Assess the knowledge level of students continuously (i.e. formatively) and not just in a summative evaluation. Formative assessment techniques are both student and lecturer centred and assist in:
 - Guiding improvement;
 - Identifying difficulties and giving students the opportunity to correct their errors;
 - Obtaining an understanding of students' knowledge on a specific topic before the lecture starts;
 - Providing lecturers with feedback on their lecturing ability; and
 - Adding variety to the learning experiences of students.
- Set the audit classroom as a milieu that replicates audit practice by applying experiential learning techniques, such as simulations. In this way, students will not only learn the subject content of auditing, but also be able to apply themselves in practice after graduation.

8.4.3 Recommendations with regard to the audit student

If change is to be brought to audit education, the following is recommended when selecting a teaching methodology to the benefit of the audit student (paragraph 4.2.1, page 111 to paragraph 4.2.2, page 124):

- It should aid in establishing a positive perception of the variables in the teaching-learning environment, because this could:
 - Result in a greater probability that students would apply a deep learning approach; and
 - Result in the achievement of high-quality learning outcomes, such as critical thinking, which need to be met in audit education.
- This could be done by (i) using more formative assessment and feedback approaches; (ii) by applying more active teaching methodologies such as case studies and simulations; and (iii) by displaying the characteristics of an effective lecturer such as being supportive and helpful to students.
- It should aid in eliminating the negative impact of endogenous and exogenous factors on student achievement.

8.4.4 Recommendations with regard to the audit subject content

As identified in chapter 5 (paragraph 5.1, page 138 to paragraph 5.5, page 172), it can be recommended that an auditing course, and any educational instrument used in it, at university or other higher education institutions in South Africa specifically, should ensure that the audit students' perceived broad competence is improved by:

- Including the subject content requirements to not only meet the various auditing and assurance competencies; but also
- Ensuring that students will be able to demonstrate the generic and pervasive skills competencies after graduation. This should, however, be actively planned.

8.4.5 Recommendations with regard to frameworks for simulation design and the development of the audit simulation project and supporting substance

In developing any instrument as a teaching tool, it is recommended that the teaching tool:

- Specifies all the relevant variables, such as those in the audit teaching-learning environment. Consideration should be given also to including these variables in the tool by actively planning how each of the elements in each variable can be incorporated;
- Is developed in an organised and systematic way so as to ensure that the tool is understandable and that students are not left confused after it has been applied during their learning process;
- Is developed based on a set framework informed by proper research findings of similar studies; and
- Mitigates issues by proper planning and setting objectives to prevent ineffective development and practice.

8.4.6 Recommendations on the evaluation of the audit simulation

It was proven in this study (paragraph 8.2.6, page 8.2.6) that the newly developed audit simulation and supporting substance can answer the call for change and assist in bringing change to the way we as accounting educators develop and train the young auditors of the future. By using this newly developed audit simulation in the audit classroom, all the variables in the audit teaching-learning environment will be taken into account

(paragraph 8.2.6.3, page 364). This would produce young professionals entering practice with the competence to face the challenges of the audit environment.

Furthermore, it was noted that certain factors of the simulation, if altered, could improve the experience of students when performing a simulation as this one. The students indicated that (paragraph 7.6.8.2, page 320):

- The project was time consuming and was applied during a busy period in their final year of studies (timing). However, it was noted from the empirical findings (paragraph 7.6.6.9, page 314) that time management skills were developed in the process and had a positive effect on their learning in the end; and
- The simulation was an unexpected high expense due to the submission of a hard copy audit file, and that this cost was not in line with the small contribution it made toward their final mark for the audit subject (cost versus benefit).

Therefore, based on these findings, it is recommended that:

- When planning this simulation in future, audit lecturers should ensure that it is introduced during a period of the year that is not so congested by other subject obligations, but also make sure that it still provides the opportunity to develop time management skills; and
- The audit lecturer revisit the cost versus benefit factor of performing the simulation and consider having the completed simulation submitted electronically, instead of in hard copy, and to increase its contribution to the students' final mark in the audit subject.

8.5 Conclusion on the overall primary research objective

The overall primary research objective this study aimed to achieve was (paragraph 1.5, page 15):

To intervene and assist in the process of bringing change to the current approach followed in audit education by primarily developing an instrument, i.e. simulation project, which can be implemented by universities and other higher education institutions, in South Africa and globally.

The aim was to meet the overall primary research objective by first drawing conclusions on grounds of the robust literature review performed in chapters 2 to 6 (page 26 to page 248), the empirical findings obtained by means of applying a mixed methodology, as stated in chapter 7 (page 248 to page 327), as well as the recommendations made in this chapter

(paragraph 8.4, page 367). In this way, the eight secondary research objectives which support the overall primary research objective were concluded upon (paragraph 8.2, page 330).

Based on these findings, it can be concluded that the new audit simulation can indeed serve as a tool to intervene and assist in the process of bringing change to the current approach followed in audit education and that it can be implemented by universities and other higher education institutions in South Africa and globally.

Thus, the overall primary research objective of this study was achieved.

A discussion is provided below on how this thesis, together with its findings, conclusions, recommendations and new developments, contributes to the audit education field on an international front.

8.6 Contribution to audit education

The author is hopeful that this study would assist in bringing change to audit education, not just in South Africa, but also on the international front. Furthermore, the author trusts that this study has shown how valuable research in accounting education, but more specifically audit education, is to ensure that we as educators and researchers in this field deliver students who are deemed to be competent and prospective leaders in their field.

This study has made the following contributions to accounting education in general, and in audit education especially, as it **assisted in the process of intervening and bringing change to the approach followed in audit education**:

- Chapter 2, starting on page 26, contributed to the existing literature by **simplifying the current paradigmatic issues** in the field of accounting education research. It further **presented a guideline for the novice researcher in the field of accounting education** with regard to selecting a paradigm and methodology when investigating phenomena affecting students. The reader would, therefore, have gained deeper insight into how the choice of methodology can affect the outcome of a study. The **examples provided** should assist the novice accounting education researcher in applying the principles highlighted and discussed throughout the chapter.
- A **new framework for simulation design** has been developed that incorporates all the variables in the audit teaching-learning environment. Other audit educators can

use this framework to also develop audit simulations or a variety of other educational tools (paragraph 6.5, page 188);

- A **new teaching tool**, the **newly developed simulation**, contributes to audit education by adding an **original and comprehensive audit simulation** that is up to date with the latest auditing standards and other legislation. This simulation can be **implemented at universities, training offices and other higher education institutions globally**. The simulation project executed in this study will, therefore, contribute considerably to audit education in general and can **aid audit educators around the world** in preparing audit students for the hard reality of practice. This will **initiate** the much-needed change in the approach followed in educating audit students. The simulation does **not only cover the technical audit skills** addressed in other simulations, but **also addresses various soft skills** (generic and pervasive skills) (see **annexure M**, page 488);
- A **new data-gathering instrument** was developed and tested, which other audit educators can apply in their classroom so as to evaluate the effectiveness of their teaching methodologies (see annexure A, page 410, and annexure B, page 420);
- **Recommendations** were made on the findings of this study as to how audit lecturers, in their individual capacity, can and should attempt to improve the teaching approach in the audit classroom (paragraph 8.4, page 367); and
- **Areas for further research**, which could contribute to the robustness of research in the accounting education field, were identified (paragraph 8.8, page 377).

The study further contributes to the existing literature by **adding a comprehensive perspective** on the teaching methods which can be applied in audit education and **further addresses the ongoing call for change** in accounting education in South Africa and globally. This study also **sets a framework for teaching methodologies and assessment**, and **fosters a better understanding** of how teaching and assessment methods in audit education can provide audit educators with criteria for selecting a method to achieve a particular learning objective.

The author is of the opinion that the aforementioned contributions are invaluable **internationally** because they contribute to the broader accounting and auditing profession outside of a South African context due to the fact that:

- The criticism on the current approach followed in audit education, noted throughout the internationally cited literature in this thesis, showed that the issue is an internationally recognised phenomenon. Therefore, the findings and recommendations of the study should be valuable to all audit educators globally; and
- The auditing standards (e.g. ISAs) used in incorporating the subject content requirements into the newly developed audit simulation are applied internationally and, therefore, the simulation could be applied by audit educators in their respective audit classrooms worldwide.

A study of this nature has, therefore, shown to be relevant and topical and that the findings and recommendations will be useful not just for audit educators, but to all academics in the field of accounting education, seeing that the principles on which the study are based can be applied to any subject in the accounting education environment.

8.7 Limitations of the study

Although this comprehensive study has highlighted the importance of accounting education research, more specifically in audit education, the findings of this study are not without limitations. Below follows a discussion on these limitations and on how the author attempted to address them.

First, the results of the quantitative analysis are limited with regard to its generalisability due to the non-random sample applied. The study also evaluated student perceptions and not actual skills improved.

Although only two SAICA-accredited universities took part in this study, the results are not confined to only one university and can increase the degree to which they can be generalised. Hence, the findings could be useful for not only audit educators at these universities, but also audit and accounting education lecturers practising in accounting education in general around the globe.

Secondly, the fact that the students studied at two different SAICA-accredited universities could also have been a limiting factor.

Both the sample populations were SAICA-accredited universities and, therefore, their curricula should have the same content as prescribed to all SAICA-accredited universities. The author took great care in ensuring the comparability of the results between these two universities by making sure that (paragraph 7.3, page 251):

- The audit curriculum programme was structured in the same manner for both universities and that these students, thus, had to have covered the same audit subject content requirements up until the time the study was performed;
- The teaching methodologies and assessment and feedback approaches applied by lecturers at both universities were the same in the majority of the cases; and
- The textbooks and auditing standards were the same for both universities.

Thirdly, the students from the two different universities had some differences in demographical backgrounds.

Certain differences were found in the demographical backgrounds of the two student groups that participated in the study. However, any differences in the students' perception of the teaching methodology between the two universities as a result of the difference in demographical backgrounds were corrected for by performing an ANCOVA analysis. In this way, any significant differences between the pre-test results of the two universities were corrected for (paragraph 7.6.5.1, page 298) before the results of the post-test were compared between the two participating universities.

Furthermore, no other control group (SAICA-accredited university) was identified that resembled the sample size and demographical variables such as age, race and gender and cultural background of University Y.

The sample population provided reliable results, because the group-administered questionnaires were distributed to populations affected by the same phenomena under investigation in this study. The sampling rate limitations and bias were addressed, because the whole population affected by the phenomena was considered at both universities partaking in the study. The quantitative analysis was finally scrutinised by a qualified statistician at the Statistical Consultation Services of the North-West University (Potchefstroom Campus) to ensure that all the findings were accurate and interpreted correctly.

Finally, the focus group discussions were confined to only one university.

The validity and the reliability of the results of the quantitative analysis were not only confirmed by means of several statistical measures (paragraph 7.5, page 256), but a mixed methodology was applied, with focus group discussions being held to inform the quantitative results (paragraph 7.5, page 256). Although the results of the focus group discussions were confined to University X, they yielded valuable insights into the findings of the quantitative

analysis. Bias was restricted because all the students who partook in the experiment at University X were invited to join in the focus group discussions. It should be noted that content analysis of transcripts might not yield exactly the same themes when performed by someone else, due to the evaluative nature of this type of analysis. However, the author took great care in ensuring that the themes were identified as precisely and completely as possible.

This was done by:

- Using the software tool ATLAS.ti to content analyse the descriptive data;
- Attentively reading the transcripts several times; and
- Applying careful judgement and precision when the final themes were formulated and when the quotes were extracted and translated.

8.8 Areas for further development and research

It was noted throughout this thesis that several other research possibilities and developmental opportunities exist which could further contribute to the robustness of accounting education research.

The following *areas for further research* were identified by the author which could further assist in promoting scholarship in this field of study:

- The study could be expanded to all SAICA-accredited universities and some other universities abroad with the aim to corroborate or disprove the findings of this study. From this, a theory could be formed as to the best approach in teaching auditing at higher education level. This could also provide the opportunity to apply other qualitative data collection techniques to totally benefit from the various advantages that mixed methodology use offers;
- The effect of the newly developed audit simulation on the physical audit subject marks of the students could be determined; and
- Studies can be conducted to determine the impact of students' personal characteristics on their perception of the variables in the teaching-learning environment, the subsequent effect on the audit students' approaches to learning and the consequent impact on the quality of the learning outcomes. In so doing, ways could be identified for accounting educationalists to improve their teaching methodology not only to encourage students to

follow a deep learning approach, but to also achieve higher-quality learning outcomes. These studies could be performed across various:

- Subjects in the accounting education spectrum;
- Academic year levels of students; and
- Various national and international universities.

Further *development opportunities* also exist. These include:

- Modifying the newly developed questionnaire to include the competencies and subject content requirements of all the disciplines in accounting education. In this way, lecturers will be given the opportunity to assess their teaching methodology across several subjects and academic year groups; and
- Further developing the audit simulation into an electronically based teaching tool to limit unexpected costs to students and to make it more accessible to the broader populations of students and lecturers around the world.

8.9 Final remarks

Throughout this thesis, two main thoughts kept surfacing, namely that change is necessary in the approach followed in educating audit students and that all the variables in the audit teaching-learning environment need consideration if an attempt is to be made to bring this change. This was proven not only by the extensive literature review, which covered some of the valuable research in this field dating back as far as the 1950s, but also by the empirical findings which proved that this call for change is **still relevant today**. It was established that this change can indeed be brought to the audit education environment by applying teaching methodologies, such as the newly developed audit simulation, which include all the variables in the audit teaching-learning environment. Furthermore, this study attempted to show the contribution and differences that research, not just in accounting education, but also in education in general, can make in ensuring that the youth of South Africa and abroad receive an education which allows them to conquer the world outside the higher education institution.

Based on the findings of this study, it can be concluded that audit lecturers should attempt to apply a teaching methodology that is both student and lecturer centred. This will not only enhance the quality of the students who graduate from higher education, but will also ensure that lecturers strive to add value to their personal and professional development, as well as

to student education. This, in turn, could guarantee that audit education will transform continuously and stay up to date with the requirements of the diverse and unique population of students and public practice.

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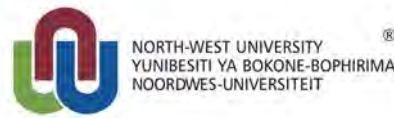
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Annexure A

Pre-test survey for third year audit students at a SAICA-accredited university in South Africa



(Utilized in chapter 7)

Pre-test survey for third year audit students at a SAICA accredited university in South Africa

Dear auditing student,

A PhD student at the North-West University is conducting research to determine whether an audit simulation at tertiary level, will enhance the audit students' perceived competence and understanding of the audit subject. The results of this survey will be implemented to enhance the teaching of auditing at tertiary level.

It should be noted that your student number is required when completing the questionnaire. The reason behind this is to ensure that only registered students complete the questionnaire. The information provided by you will be kept completely confidential and no student will be specifically identified in the results when published. Furthermore, the answers given by you to the questions will not negatively impact you in any way; they will only serve to enhance the process of teaching auditing at tertiary level.

We are really grateful for the contribution you will be making and the time you will take to complete this questionnaire.

Please complete the questionnaire by indicating your answer for each question on the multiple-choice card provided to you.

PART A: DEMOGRAPHICAL INFORMATION ABOUT AUDITING STUDENT

Please answer the following questions with regard to your demographics (for statistical purposes only).

1. My gender is:
 - 1: Female
 - 2: Male

2. My race is:
 - 1: Black
 - 2: White
 - 3: Coloured
 - 4: Indian
 - 5: Asian
 - 6: Other

3. My mother tongue is:
 - 1: English
 - 2: Afrikaans
 - 3: An African language
 - 4: Other

4. The university that I am currently studying at is the:
 - 1: University X
 - 2: University Y

5. I am enrolled on the following basis at the university that I am studying at:
 - 1: Full-time
 - 2: Part-time

6. My practical experience in audit practice is:
 - 1: 0 months
 - 2: 1 – 6 months
 - 3: 7 – 12 months
 - 4: More than 12 months

PART B: PRE-ENGAGEMENT ACTIVITIES

Please answer the following questions with regard to pre-engagement activities in the audit process by using the following scale:

1. Not at all
2. Very little
3. Somewhat
4. Quite a bit
5. To a great extent

The manner in which auditing was taught (the teaching methodology) up to now effectively assisted me in understanding:

7. The audit process as a whole.
8. The various types of assurance services that are available.
9. The various types of other services (non-assurance) that are available.
10. When each type of assurance service may be performed.
11. When each type of other services may be performed.
12. The legislative procedures required to accept a client as an audit client.
13. The professional pronouncement procedures to accept a client as an audit client.
14. The content requirements pertaining to engagement letters.
15. The circumstances that render the need for a new engagement letter to be issued for existing engagements.

The manner in which auditing was taught (the teaching methodology) up to now enabled me to:

16. Identify assurance services appropriate in meeting an entity's needs.
17. Identify other services appropriate in meeting an entity's needs.
18. Identify the accounting standards applicable to a particular engagement.
19. Identify the auditing standards applicable to a particular engagement.
20. Identify any other standards applicable to a particular engagement.
21. Identify the legislation applicable to a particular engagement.
22. Gather information to assess whether or not there are significant threats to ethical requirements resulting from undertaking the engagement.
23. Examine information to assess whether or not there are significant threats to ethical requirements resulting from undertaking the engagement.
24. Perform legislative procedures required to accept a client as an audit client.
25. Perform professional pronouncement procedures to accept a client as an audit client.
26. Draft an engagement letter.
27. Recognise the circumstances that render the need for a new engagement letter to be issued for existing engagements.

PART C: PLANNING THE AUDIT ENGAGEMENT

Please answer the following questions with regard to planning the audit engagement by using the following scale:

1. Not at all
2. Very little
3. Somewhat
4. Quite a bit
5. To a great extent

The manner in which auditing was taught (the teaching methodology) up to now effectively assisted me in understanding:

28. The requirements in obtaining an understanding of the entity and its environment.
29. The requirements in obtaining an understanding of the internal control environment of the entity, including IT controls.
30. The factors that affect the materiality calculation.
31. The major classes of transactions and balances within the different accounting cycles within an entity.
32. When controls in the internal control environment of the entity will be relevant to the audit.
33. The requirements for internal controls relevant to the audit to be designed effectively.
34. The requirements for internal controls relevant to the audit to be implemented effectively.
35. The procedures that may be performed in evaluating the design of the internal controls relevant to the audit.
36. The procedures that may be performed in evaluating the implementation of the internal controls relevant to the audit.
37. The impact of the design and implementation evaluation on the control risk assessment at the assertion level for each significant account balance, class of transactions and disclosure.

The manner in which auditing was taught (the teaching methodology) up to now enabled me to:

38. Obtain an understanding of the entity and its environment.
39. Obtain an understanding of the internal control environment of the entity.
40. Obtain an understanding of the IT control environment of the entity.
41. Obtain an understanding of the entity's risk assessment process.
42. Obtain an understanding of the entity's information system.
43. Obtain an understanding of the entity's business processes.
44. Obtain an understanding of the entity's communications.
45. Obtain an understanding of the entity's financial reporting.
46. Obtain an understanding of the entity's control activities.
47. Obtain an understanding of the entity's monitoring of controls.

48. Identify the specific risks (inherent risks) that could result in material misstatements in the financial statements, at the overall financial statement level.
49. Identify the specific risks (control risks) that could result in material misstatements in the financial statements, at the overall financial statement level.
50. Assess the inherent risk at the overall financial statement level.
51. Assess the control risk at the overall financial statement level.
52. Assess the risk of material misstatement (inherent risk x control risk) at the overall financial statement level.
53. Develop an understanding of the decision-making needs of the users of the financial statements, hence selecting an appropriate benchmark for calculating materiality.
54. Assess the factors that affect the materiality calculation.
55. Calculate the planning materiality figure.
56. Calculate the planning performance materiality figure.
57. Determine the overall audit strategy at the overall financial statement level.
58. Perform risk assessment procedures such as planning analytical procedures.
59. Identify significant accounts at the assertion level for each significant account balance, class of transactions and disclosure.
60. Identify the specific risks (inherent risks) that could result in material misstatements in the financial statements, at the assertion level for each significant account balance, class of transaction or disclosure.
61. Assess the inherent risk at the assertion level for each significant account balance, class of transaction or disclosure.
62. Understand the major classes of transactions and balances within the different accounting cycles within the entity.
63. Identify the internal controls (including IT-related controls), relevant to the audit.
64. Document the internal controls (including IT-related controls), relevant to the audit.
65. Assess the control risk at the assertion level for each significant account balance, class of transaction or disclosure.
66. Assess the risk of material misstatement (inherent risk x control risk) at the assertion level for each significant account balance, class of transaction or disclosure.
67. Determine the applicable financial reporting framework applicable to the audit engagement.
68. Determine the applicable auditing standards applicable to the audit engagement.
69. Determine the applicable legislative and regulatory requirements applicable to the audit engagement.
70. Determine the audit strategy for each significant account balance, class of transactions and disclosure at the assertion level.
71. Design effective and efficient audit procedures to address the risks identified for each significant account balance, class of transactions and disclosure at the assertion level.
72. Design effective and efficient audit plans (audit programs) for each significant account balance, class of transactions and disclosure at the assertion level.

PART D: EXECUTING THE AUDIT ENGAGEMENT

Please answer the following questions with regard to executing the audit engagement by using the following scale:

1. Not at all
2. Very little
3. Somewhat
4. Quite a bit
5. To a great extent

The manner in which auditing was taught (the teaching methodology) up to now effectively assisted me in understanding:

73. The sampling method(s) to be applied whilst performing the audit procedures.
74. The implications of deficiencies identified in the internal controls relevant to the audit on the audit approach at the assertion level for each significant account balance, class of transactions and disclosure.

The manner in which auditing was taught (the teaching methodology) up to now enabled me to:

75. Evaluate the operating effectiveness of the internal controls relevant to the audit by performing tests of the controls.
76. Perform audit procedures included in the audit programs for each significant account balance, class of transactions and disclosure at the assertion level.
77. Document significant findings or issues that arose during the engagement.
78. Document audit differences on the schedule of audit differences.
79. Document sufficient information to support the nature, timing and extent of the further audit procedures performed.
80. Document sufficient information to support the nature, timing and extent of the results of the audit procedures.
81. Conclude whether the audit procedures met the objective(s).

PART E: COMPLETING THE AUDIT ENGAGEMENT

Please answer the following questions with regard to completing the audit engagement by using the following scale:

1. Not at all
2. Very little
3. Somewhat
4. Quite a bit
5. To a great extent

The manner in which auditing was taught (the teaching methodology) up to now effectively assisted me in understanding:

- 82. The audit requirements in relation to fraud risks.
- 83. The audit requirements with regard to going concern evaluations.
- 84. The audit requirements with regard to laws and regulations.
- 85. The audit requirements with regard to related party transactions.
- 86. The audit requirements with regard to subsequent events.
- 87. The purpose of performing journal entry testing whilst completing the audit engagement.
- 88. The process in evaluating unadjusted audit misstatements.
- 89. The impact of the unadjusted audit misstatement evaluation on the audit opinion.
- 90. The considerations to distinguish between whether an unadjusted audit misstatement(s) is material or material and pervasive.
- 91. The required information to be included in a management representation letter.
- 92. The importance of quality control in performing engagements.
- 93. What sufficient audit evidence entails.
- 94. What appropriate audit evidence entails.
- 95. The quality control requirements, from an audit firm perspective, in connection with performing an audit.
- 96. The requirements with regard to audit working papers.

The manner in which auditing was taught (the teaching methodology) up to now enabled me to:

- 97. Perform the required fraud risk audit procedures.
- 98. Perform a going concern evaluation.
- 99. Perform the required laws and regulations audit procedures.
- 100. Perform the required related party transactions audit procedures.
- 101. Perform the required subsequent events audit procedures.
- 102. Perform journal entry testing procedures.
- 103. Identify factors impacting the final materiality figure calculation.
- 104. Calculate final the materiality figure.
- 105. Calculate the final performance materiality figure.
- 106. Evaluate unadjusted audit misstatements.
- 107. Determine if an unadjusted audit misstatement(s) represents a scope limitation.
- 108. Determine if an unadjusted audit misstatement(s) represents a difference with a reporting framework.
- 109. Determine whether the effect of the unadjusted audit misstatement(s) is material or material and pervasive.
- 110. Conclude on the type of audit report to be issued.
- 111. Evaluate whether the financial statements in all material aspects are in line with the applicable financial reporting framework.
- 112. Prepare a management representation letter.
- 113. Conclude whether sufficient audit evidence has been obtained.

- 114. Conclude whether appropriate audit evidence has been obtained.
- 115. Conclude whether all quality control requirements, from an audit firm perspective, have been adhered to during the audit.
- 116. Conclude whether audit working papers are complete (include sufficient and appropriate information).

PART F: REPORTING AND CONCLUDING ON THE AUDIT ENGAGEMENT

Please answer the following questions with regard to completing the audit engagement by using the following scale:

- 1. Not at all
- 2. Very little
- 3. Somewhat
- 4. Quite a bit
- 5. To a great extent

The manner in which auditing was taught (the teaching methodology) up to now effectively assisted me in understanding:

- 117. The required communications with management.
- 118. The required communications with those charged with governance.
- 119. The required communications with other stakeholders.

The manner in which auditing was taught (the teaching methodology) up to now enabled me to:

- 120. Draft an appropriate audit report in accordance with all requirements.
- 121. Identify subsequent events.
- 122. Consider the impact of subsequent events on the audit report.
- 123. Prepare information for timely discussion with management.
- 124. Prepare information for timely discussion with those charged with governance.
- 125. Prepare information for timely discussion with other stakeholders.
- 126. Recommend improvements for deficiencies identified in the internal controls relevant to the audit.

PART G: PERVASIVE SKILLS SUCH AS ETHICS AND PROFESSIONALISM, PERSONAL ATTRIBUTES AND PROFESSIONAL SKILLS

Please answer the following questions with regard to completing the audit engagement by using the following scale:

- 1. Not at all
- 2. Very little
- 3. Somewhat
- 4. Quite a bit
- 5. To a great extent

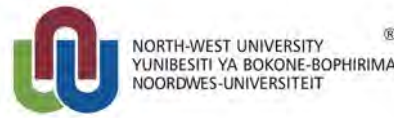
The manner in which auditing was taught (the teaching methodology) up to now enhanced my ability to demonstrate the following skills:

- 127. Protection of public interest.
- 128. Acting competently with honesty and integrity.
- 129. Carrying out work with a desire to exercise due care.
- 130. Maintaining objectivity.
- 131. Maintaining independence.
- 132. Avoiding conflict of interest.
- 133. Protecting the confidentiality of information.
- 134. Maintaining the profession's reputation.
- 135. Enhancing the profession's reputation.
- 136. Adhering to the rules of professional conduct.
- 137. Self-management.
- 138. Demonstrating leadership.
- 139. Demonstrating initiative.
- 140. Maintaining competence.
- 141. Demonstrating competence.
- 142. Striving to add value in an innovative manner.
- 143. Managing change.
- 144. Treating others in a professional manner.
- 145. Being a life-long learner.
- 146. Working effectively as a team member.
- 147. Managing time effectively.
- 148. Gathering information.
- 149. Developing an understanding of the operating environment of an entity.
- 150. Identifying the needs of internal or external clients.
- 151. Developing a plan to meet the identified needs.
- 152. Analysing information or ideas.
- 153. Performing complex computations.
- 154. Verifying information.
- 155. Validating information.
- 156. Integrating ideas from various sources.
- 157. Integrating information from various sources.
- 158. Drawing conclusions.
- 159. Forming opinions.
- 160. Identifying problems or issues.
- 161. Developing solutions for identified problems.
- 162. Providing advice.
- 163. Sharing information through written discussion.
- 164. Sharing information through oral discussion.
- 165. Preparing documents.
- 166. Presenting information effectively.
- 167. Planning projects.

- 168. Managing projects.
- 169. Identifying the need for internal expertise.
- 170. Identifying the need external expertise.
- 171. Facilitating decision-making.
- 172. Leading effective meetings.
- 173. Supervising others.
- 174. Understanding how IT impacts a CA (SA)'s daily functions and routines.
- 175. Considering basic legal concepts.
- 176. Understanding the national environment.
- 177. Understanding the international environment.

Annexure B

Post-test survey for third year audit students at a SAICA-accredited university in South Africa



(Utilized in chapter 7)

Post-test survey for third year audit students at a SAICA accredited university in South Africa

Dear auditing student,

A PhD student at the North-West University is conducting research to determine whether an audit simulation at tertiary level, will enhance the audit students' perceived competence and understanding of the audit subject. The results of this survey will be implemented to enhance the teaching of auditing at tertiary level.

It should be noted that your student number is required when completing the questionnaire. The reason behind this is to ensure that only registered students complete the questionnaire. The information provided by you will be kept completely confidential and no student will be specifically identified in the results when published. Furthermore, the answers given by you to the questions will not negatively impact you in any way; they will only serve to enhance the process of teaching auditing at tertiary level.

We are really grateful for the contribution you will be making and the time you will take to complete this questionnaire.

Please complete the questionnaire by indicating your answer for each question on the multiple-choice card provided to you.

PART A: DEMOGRAPHICAL INFORMATION ABOUT AUDITING STUDENT

Please answer the following questions with regard to your demographics (for statistical purposes only).

1. My gender is:
 - 1: Female
 - 2: Male

2. My race is:
 - 1: Black
 - 2: White
 - 3: Coloured
 - 4: Indian
 - 5: Asian
 - 6: Other

3. My mother tongue is:
 - 1: English
 - 2: Afrikaans
 - 3: An African language
 - 4: Other

4. The university that I am currently studying at is the:
 - 1: University X
 - 2: University Y

5. I am enrolled on the following basis at the university that I am studying at:
 - 1: Full-time
 - 2: Part-time

6. My practical experience in audit practice is:
 - 1: 0 months
 - 2: 1 – 6 months
 - 3: 7 – 12 months
 - 4: More than 12 months

PART B: PRE-ENGAGEMENT ACTIVITIES

Please answer the following questions with regard to pre-engagement activities in the audit process by using the following scale:

1. Not at all
2. Very little
3. Somewhat
4. Quite a bit
5. To a great extent

The manner in which auditing was taught (the teaching methodology) up to now (WITH SPECIFIC REFERENCE TO THE AUDIT SIMULATION IF YOU HAVE ALREADY PARTICIPATED IN IT) effectively assisted me in understanding:

7. The audit process as a whole.
8. The various types of assurance services that are available.
9. The various types of other services (non-assurance) that are available.
10. When each type of assurance service may be performed.
11. When each type of other services may be performed.
12. The legislative procedures required to accept a client as an audit client.
13. The professional pronouncement procedures to accept a client as an audit client.
14. The content requirements pertaining to engagement letters.
15. The circumstances that render the need for a new engagement letter to be issued for existing engagements.

The manner in which auditing was taught (the teaching methodology) up to now (WITH SPECIFIC REFERENCE TO THE AUDIT SIMULATION IF YOU HAVE ALREADY PARTICIPATED IN IT) enabled me to:

16. Identify assurance services appropriate in meeting an entity's needs.
17. Identify other services appropriate in meeting an entity's needs.
18. Identify the accounting standards applicable to a particular engagement.
19. Identify the auditing standards applicable to a particular engagement.
20. Identify any other standards applicable to a particular engagement.
21. Identify the legislation applicable to a particular engagement.
22. Gather information to assess whether or not there are significant threats to ethical requirements resulting from undertaking the engagement.
23. Examine information to assess whether or not there are significant threats to ethical requirements resulting from undertaking the engagement.
24. Perform legislative procedures required to accept a client as an audit client.
25. Perform professional pronouncement procedures to accept a client as an audit client.
26. Draft an engagement letter.
27. Recognise the circumstances that render the need for a new engagement letter to be issued for existing engagements.

PART C: PLANNING THE AUDIT ENGAGEMENT

Please answer the following questions with regard to planning the audit engagement by using the following scale:

1. Not at all
2. Very little
3. Somewhat
4. Quite a bit
5. To a great extent

The manner in which auditing was taught (the teaching methodology) up to now (WITH SPECIFIC REFERENCE TO THE AUDIT SIMULATION IF YOU HAVE ALREADY PARTICIPATED IN IT) effectively assisted me in understanding:

28. The requirements in obtaining an understanding of the entity and its environment.
29. The requirements in obtaining an understanding of the internal control environment of the entity, including IT controls.
30. The factors that affect the materiality calculation.
31. The major classes of transactions and balances within the different accounting cycles within an entity.
32. When controls in the internal control environment of the entity will be relevant to the audit.
33. The requirements for internal controls relevant to the audit to be designed effectively.
34. The requirements for internal controls relevant to the audit to be implemented effectively.
35. The procedures that may be performed in evaluating the design of the internal controls relevant to the audit.
36. The procedures that may be performed in evaluating the implementation of the internal controls relevant to the audit.
37. The impact of the design and implementation evaluation on the control risk assessment at the assertion level for each significant account balance, class of transactions and disclosure.

The manner in which auditing was taught (the teaching methodology) up to now (WITH SPECIFIC REFERENCE TO THE AUDIT SIMULATION IF YOU HAVE ALREADY PARTICIPATED IN IT) enabled me to:

38. Obtain an understanding of the entity and its environment.
39. Obtain an understanding of the internal control environment of the entity.
40. Obtain an understanding of the IT control environment of the entity.
41. Obtain an understanding of the entity's risk assessment process.
42. Obtain an understanding of the entity's information system.
43. Obtain an understanding of the entity's business processes.
44. Obtain an understanding of the entity's communications.
45. Obtain an understanding of the entity's financial reporting.

46. Obtain an understanding of the entity's control activities.
47. Obtain an understanding of the entity's monitoring of controls.
48. Identify the specific risks (inherent risks) that could result in material misstatements in the financial statements, at the overall financial statement level.
49. Identify the specific risks (control risks) that could result in material misstatements in the financial statements, at the overall financial statement level.
50. Assess the inherent risk at the overall financial statement level.
51. Assess the control risk at the overall financial statement level.
52. Assess the risk of material misstatement (inherent risk x control risk) at the overall financial statement level.
53. Develop an understanding of the decision-making needs of the users of the financial statements, hence selecting an appropriate benchmark for calculating materiality.
54. Assess the factors that affect the materiality calculation.
55. Calculate the planning materiality figure.
56. Calculate the planning performance materiality figure.
57. Determine the overall audit strategy at the overall financial statement level.
58. Perform risk assessment procedures such as planning analytical procedures.
59. Identify significant accounts at the assertion level for each significant account balance, class of transactions and disclosure.
60. Identify the specific risks (inherent risks) that could result in material misstatements in the financial statements, at the assertion level for each significant account balance, class of transaction or disclosure.
61. Assess the inherent risk at the assertion level for each significant account balance, class of transaction or disclosure.
62. Understand the major classes of transactions and balances within the different accounting cycles within the entity.
63. Identify the internal controls (including IT-related controls), relevant to the audit.
64. Document the internal controls (including IT-related controls), relevant to the audit.
65. Assess the control risk at the assertion level for each significant account balance, class of transaction or disclosure.
66. Assess the risk of material misstatement (inherent risk x control risk) at the assertion level for each significant account balance, class of transaction or disclosure.
67. Determine the applicable financial reporting framework applicable to the audit engagement.
68. Determine the applicable auditing standards applicable to the audit engagement.
69. Determine the applicable legislative and regulatory requirements applicable to the audit engagement.
70. Determine the audit strategy for each significant account balance, class of transactions and disclosure at the assertion level.
71. Design effective and efficient audit procedures to address the risks identified for each significant account balance, class of transactions and disclosure at the assertion level.
72. Design effective and efficient audit plans (audit programs) for each significant account balance, class of transactions and disclosure at the assertion level.

PART D: EXECUTING THE AUDIT ENGAGEMENT

Please answer the following questions with regard to executing the audit engagement by using the following scale:

1. Not at all
2. Very little
3. Somewhat
4. Quite a bit
5. To a great extent

The manner in which auditing was taught (the teaching methodology) up to now (WITH SPECIFIC REFERENCE TO THE AUDIT SIMULATION IF YOU HAVE ALREADY PARTICIPATED IN IT) effectively assisted me in understanding:

73. The sampling method(s) to be applied whilst performing the audit procedures.
74. The implications of deficiencies identified in the internal controls relevant to the audit on the audit approach at the assertion level for each significant account balance, class of transactions and disclosure.

The manner in which auditing was taught (the teaching methodology) up to now (WITH SPECIFIC REFERENCE TO THE AUDIT SIMULATION IF YOU HAVE ALREADY PARTICIPATED IN IT) enabled me to:

75. Evaluate the operating effectiveness of the internal controls relevant to the audit by performing tests of the controls.
76. Perform audit procedures included in the audit programs for each significant account balance, class of transactions and disclosure at the assertion level.
77. Document significant findings or issues that arose during the engagement.
78. Document audit differences on the schedule of audit differences.
79. Document sufficient information to support the nature, timing and extent of the further audit procedures performed.
80. Document sufficient information to support the nature, timing and extent of the results of the audit procedures.
81. Conclude whether the audit procedures met the objective(s).

PART E: COMPLETING THE AUDIT ENGAGEMENT

Please answer the following questions with regard to completing the audit engagement by using the following scale:

1. Not at all
2. Very little
3. Somewhat
4. Quite a bit
5. To a great extent

The manner in which auditing was taught (the teaching methodology) up to now (WITH SPECIFIC REFERENCE TO THE AUDIT SIMULATION IF YOU HAVE ALREADY PARTICIPATED IN IT) effectively assisted me in understanding:

82. The audit requirements in relation to fraud risks.
83. The audit requirements with regard to going concern evaluations.
84. The audit requirements with regard to laws and regulations.
85. The audit requirements with regard to related party transactions.
86. The audit requirements with regard to subsequent events.
87. The purpose of performing journal entry testing whilst completing the audit engagement.
88. The process in evaluating unadjusted audit misstatements.
89. The impact of the unadjusted audit misstatement evaluation on the audit opinion.
90. The considerations to distinguish between whether an unadjusted audit misstatement(s) is material or material and pervasive.
91. The required information to be included in a management representation letter.
92. The importance of quality control in performing engagements.
93. What sufficient audit evidence entails.
94. What appropriate audit evidence entails.
95. The quality control requirements, from an audit firm perspective, in connection with performing an audit.
96. The requirements with regard to audit working papers.

The manner in which auditing was taught (the teaching methodology) up to now (WITH SPECIFIC REFERENCE TO THE AUDIT SIMULATION IF YOU HAVE ALREADY PARTICIPATED IN IT) enabled me to:

97. Perform the required fraud risk audit procedures.
98. Perform a going concern evaluation.
99. Perform the required laws and regulations audit procedures.
100. Perform the required related party transactions audit procedures.
101. Perform the required subsequent events audit procedures.
102. Perform journal entry testing procedures.
103. Identify factors impacting the final materiality figure calculation.
104. Calculate final the materiality figure.
105. Calculate the final performance materiality figure.
106. Evaluate unadjusted audit misstatements.
107. Determine if an unadjusted audit misstatement(s) represents a scope limitation.
108. Determine if an unadjusted audit misstatement(s) represents a difference with a reporting framework.
109. Determine whether the effect of the unadjusted audit misstatement(s) is material or material and pervasive.
110. Conclude on the type of audit report to be issued.
111. Evaluate whether the financial statements in all material aspects are in line with the applicable financial reporting framework.

- 112. Prepare a management representation letter.
- 113. Conclude whether sufficient audit evidence has been obtained.
- 114. Conclude whether appropriate audit evidence has been obtained.
- 115. Conclude whether all quality control requirements, from an audit firm perspective, have been adhered to during the audit.
- 116. Conclude whether audit working papers are complete (include sufficient and appropriate information).

PART F: REPORTING AND CONCLUDING ON THE AUDIT ENGAGEMENT

Please answer the following questions with regard to completing the audit engagement by using the following scale:

- 1. Not at all
- 2. Very little
- 3. Somewhat
- 4. Quite a bit
- 5. To a great extent

The manner in which auditing was taught (the teaching methodology) up to now (WITH SPECIFIC REFERENCE TO THE AUDIT SIMULATION IF YOU HAVE ALREADY PARTICIPATED IN IT) effectively assisted me in understanding:

- 117. The required communications with management.
- 118. The required communications with those charged with governance.
- 119. The required communications with other stakeholders.

The manner in which auditing was taught (the teaching methodology) up to now (WITH SPECIFIC REFERENCE TO THE AUDIT SIMULATION IF YOU HAVE ALREADY PARTICIPATED IN IT) enabled me to:

- 120. Draft an appropriate audit report in accordance with all requirements.
- 121. Identify subsequent events.
- 122. Consider the impact of subsequent events on the audit report.
- 123. Prepare information for timely discussion with management.
- 124. Prepare information for timely discussion with those charged with governance.
- 125. Prepare information for timely discussion with other stakeholders.
- 126. Recommend improvements for deficiencies identified in the internal controls relevant to the audit.

PART G: PERVASIVE SKILLS SUCH AS ETHICS AND PROFESSIONALISM, PERSONAL ATTRIBUTES AND PROFESSIONAL SKILLS

Please answer the following questions with regard to completing the audit engagement by using the following scale:

1. Not at all
2. Very little
3. Somewhat
4. Quite a bit
5. To a great extent

The manner in which auditing was taught (the teaching methodology) up to now (WITH SPECIFIC REFERENCE TO THE AUDIT SIMULATION IF YOU HAVE ALREADY PARTICIPATED IN IT) enhanced my ability to demonstrate the following skills:

127. Protection of public interest.
128. Acting competently with honesty and integrity.
129. Carrying out work with a desire to exercise due care.
130. Maintaining objectivity.
131. Maintaining independence.
132. Avoiding conflict of interest.
133. Protecting the confidentiality of information.
134. Maintaining the profession's reputation.
135. Enhancing the profession's reputation.
136. Adhering to the rules of professional conduct.
137. Self-management.
138. Demonstrating leadership.
139. Demonstrating initiative.
140. Maintaining competence.
141. Demonstrating competence.
142. Striving to add value in an innovative manner.
143. Managing change.
144. Treating others in a professional manner.
145. Being a life-long learner.
146. Working effectively as a team member.
147. Managing time effectively.
148. Gathering information.
149. Developing an understanding of the operating environment of an entity.
150. Identifying the needs of internal or external clients.
151. Developing a plan to meet the identified needs.
152. Analysing information or ideas.
153. Performing complex computations.
154. Verifying information.
155. Validating information.
156. Integrating ideas from various sources.
157. Integrating information from various sources.
158. Drawing conclusions.
159. Forming opinions.
160. Identifying problems or issues.

- 161. Developing solutions for identified problems.
- 162. Providing advice.
- 163. Sharing information through written discussion.
- 164. Sharing information through oral discussion.
- 165. Preparing documents.
- 166. Presenting information effectively.
- 167. Planning projects.
- 168. Managing projects.
- 169. Identifying the need for internal expertise.
- 170. Identifying the need external expertise.
- 171. Facilitating decision-making.
- 172. Leading effective meetings.
- 173. Supervising others.
- 174. Understanding how IT impacts a CA (SA)'s daily functions and routines.
- 175. Considering basic legal concepts.
- 176. Understanding the national environment.
- 177. Understanding the international environment.

PART H: YOUR ATTITUDE TOWARDS THE AUDIT SIMULATION

Complete the following indicating your attitude towards the audit simulation. The scale ranges from '1' (extremely negative) to '5' (extremely positive). A 'neutral feeling' is expressed by '3'.

178.	Unlikeable**	1	2	3	4	5	Likeable**
179.	Poor**	1	2	3	4	5	Good**
180.	Unhappy**	1	2	3	4	5	Happy**
181.	Uncomfortable**	1	2	3	4	5	Comfortable**
182.	Tense**	1	2	3	4	5	Calm**
183.	Dull**	1	2	3	4	5	Exciting**
184.	Suffocating**	1	2	3	4	5	Fresh**
185.	Unpleasant**	1	2	3	4	5	Pleasant**
186.	Confused*	1	2	3	4	5	Understandable*

* Items form part of Kay's Computer Attitude Measure as used by Noyes and Garland (2005:238 - adapted).

Items form part of the Attitude Measure applied by Fouché (2006:183 – adapted) and Van der Merwe (2013:152 – adapted).

Annexure C

Confirmations of article submissions

From: Kre [<mailto:kre@airtelmail.in>]
Sent: Friday, July 11, 2014 1:42 PM
To: 'Rikus de Villiers'
Subject: JSS-113-14-Formalities
Importance: High

Subject: -Formalities

Dear Sir/Madam

Received your paper for favour of publication and after screening it is found suitable to be considered it in the following Peer-reviewed Scientific and Research international journal.

Please check that the present reference number is temporary one and Your paper will be processed and given permanent reference number When the formalities listed below are completed (check the attachment)

❑ PROVIDE LIST OF THREE REFEREES FOR REVIEW OF THE PAPER

Please check that a request letter to Referees to review a paper will be formal one. Therefore you are required to provide the full particulars about Referees

(Full Name, Present Status, Field of specialisation, Address of the Institute/Department/University, E-mail)

❑ PAY THE CHARGES OF THE PAPER (CHECK THE ATTACHMENT FOR PROFORMA INVOICE AND MODE OF THE PAYMENT)

PLEASE MUST GIVE REFERENCE NUMBER OF THE PAPER WHILE TRANSFERING THE PAYMENT THROUGH BANK OR PAYPAL TO KNOW WHO HAS MADE THE PAYMENT

Journal of Social Sciences (JSS)

Received on 10. 07. 2014

REF. NO. JSS-113-14

From: Site Administrator <noreply@sajhe.org.za>
To: 20509871@nwu.ac.za
Date: 2015/03/10 09:00 AM
Subject: SAJHE article submitted for review

Dear Sir/Madam

The following article has been submitted for review. Note that you can NO LONGER make changes to your submission. The reviewers will however notify you if any amendments are required, after which you can access your submission again.

The effectiveness of the teaching methodologies in audit education: A student perspective

Regards
System Administrator

Rikus De Villiers - Articles to be considered for publication

From: Rikus De Villiers
To: sajar@saica.co.za
Date: 2015/04/01 03:11 PM
Subject: Articles to be considered for publication
BC: Jaco Fouche
Attachments: Article 1 - Proof of language editing.pdf; Article 1.docx; Title Page Article 1.docx; Article 2 - Proof of language editing.pdf; Article 2.docx; Title Page Article 2.docx

Dear Editor,

Hope you are well. Please find attached the following:

1. Two (2) articles to be considered for publication;
2. Proof of language editing for both articles; and
3. The titles pages with the requested information and statements.

Please note that the second article follows from the first as in total these articles report on the quantitative and qualitative results respectively of a project that followed a mixed methodology.

I would like to thank you in advance for considering these articles.

Regards

Mnr. Rikus de Villiers GR(SA)
Senior Lektor
Skool vir Rekeningkundige Wetenskappe
Vanderbijlpark kampus
Gebou 4, Kantoor G12C
Tel: [016 910 3404](tel:0169103404)
Faks: [016 910 3352](tel:0169103352)



Mr. Rikus de Villiers CA (SA)
Senior Lecturer
School for Accounting
Sciences
Vanderbijlpark campus
Building 4, Office G12C
Tel: [016 910 3404](tel:0169103404)
Faks: 016 910 3352

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Annexure D

Confirmation of language editing



PROOF OF LANGUAGE EDITING

Elmarie Viljoen Taalpraktisyn · Language Practitioner

2 April 2015

I, Elmarie Viljoen, hereby certify that I have language edited the attached PhD thesis, *Evaluating the effectiveness of a newly developed simulation in improving the competence of audit students*, by Rikus de Villiers.

I am a language practitioner registered at the South African Translators' Institute (member number 1001757) and my highest qualification is an MA Language Practice.

Please contact me should there be any queries.

Elmarie Viljoen

Annexure E

Audit simulation mark plan (rubric)



Audit Simulation Mark Plan

Group	
Campus	

Required task and working paper reference		Audit principle(s)	Mark allocation considerations	Marks						Max	Tot
				0	1	2	3	4	5		
SECTION A: PRE-ENGAGEMENT ACTIVITIES											
1	A1	Considered all relevant factors in determining whether a client could be accepted as an audit client.	All relevant factors to be considered.	Not done	> 6 Errors	5 - 6 Errors	3 - 4 Errors	1 - 2 Errors	0 Errors	5	
		Concluded correctly, based on the assessment performed, whether the client could be accepted as an audit client	Correct application of methodology provided.	Not done	No	Yes				2	
2	A2	Selected the correct type of service, from the various types of services, based on the type of service to be provided.	Only audit engagement.	Not done	No	Yes				2	
3	A3	Drafted the engagement letter in the appropriate format.	Completed all required fields in the engagement letter template.	Not done	> 6 Errors	5 - 6 Errors	3 - 4 Errors	1 - 2 Errors	0 Errors	5	

SECTION B: PLANNING THE AUDIT ENGAGEMENT										
4	B1	Selected the correct applicable financial reporting framework.	Only IFRS.	Not done	No	Yes				2
		Correctly identified the applicable disclosure requirements.	Only segment information is not applicable.	Not done	3-4 Errors	1-2 Errors	0 Errors			3
		Correctly identified applicable auditing standards and other legislative and regulatory requirements.	Only ISAs are relevant.	Not done	No	Yes				2
		Correctly concluded whether the auditor intends to issue any other report(s) in addition to the auditor's report.	Should have concluded "no".	Not done	No	Yes				2
5	B2	Correctly completed the team structure document.	Completion of the document.	Not done	No	Yes				2
6	B3	Correctly concluded on whether the audit team has the appropriate competence and capabilities to perform the audit.	Correctness of conclusions.	Not done	> 6 Errors	5-6 Errors	3-4 Errors	1-2 Errors	0 Errors	5
7	B4	Correctly concluded on whether all the audit team members adhered to all independence requirements.	Correctness of conclusions.	Not done	3-4 Errors	1-2 Errors	0 Errors			3
8	B5	Obtained all the relevant information with regard to obtaining an understanding of the entity and its environment.	All required information.	Not done	> 6 Errors	5-6 Errors	3-4 Errors	1-2 Errors	0 Errors	5
9	B6	Obtained all the relevant information with regard to obtaining an understanding of the entity's internal control, including IT controls.	All required information.	Not done	> 6 Errors	5-6 Errors	3-4 Errors	1-2 Errors	0 Errors	5
10	D1	Correctly completed the fraud risk questionnaire based on the information provided.	All information provided was included.	Not done	> 6 Errors	5-6 Errors	3-4 Errors	1-2 Errors	0 Errors	5
11	B7	Identified all relevant inherent risks at the overall financial statement level.	Identification of all the applicable inherent risks at the overall financial statement level based on the information provided.	Not done	> 6 Errors	5-6 Errors	3-4 Errors	1-2 Errors	0 Errors	5

		Identified all relevant control risks at the overall financial statement level.	Identification of all applicable control risks at the overall financial statement level based on the information provided.	Not done	> 6 Errors	5-6 Errors	3-4 Errors	1-2 Errors	0 Errors	5	
12	B8	Correctly assessed the risk of material misstatement (ROMM) at the overall financial statement level, based on the inherent and control risk(s) identified in WP/B7, by applying the assessment table provided.	Application of inherent and control risks at the overall financial statement level, to the table provided (methodology).	Not done	3-4 Errors	1-2 Errors	0 Errors			3*	
		Correctly assessed the risk of material misstatement (ROMM) at the overall financial statement level, by applying the inherent and control risk(s) assessments performed in WP/B8, to the ROMM assessment matrix provided.	Application of the inherent and control risk at the overall financial statement level assessment, to the ROMM assessment matrix (methodology).	Not done	3-4 Errors	1-2 Errors	0 Errors			3*	
13	B9	Selected the correct balances to be applied in the materiality calculation, based on the balances and client information provided.	Should have selected the actual figures, as these are available for the whole year as required in the methodology provided.	Not done	No	Yes				2	
		Correctly concluded on the stability of balances to be applied in the materiality calculation, based on the balances and client information provided.	For considering the stability of the balances provided.	Not done	No	Yes				2	
		Selected the correct benchmark to be applied in the materiality calculation, based on the client information and factors provided.	Should have selected net income before tax as this is a profit-oriented entity as indicated in the audit methodology provided.	Not done	No	Yes				2*	
		Applied the correct limits (lower % and upper %) to be applied to the benchmark selected.	Should have selected the applicable limits as indicated in the audit methodology provided.	Not done	2 Errors	1 Error	0 Errors			3*	
		Calculated the lower and upper limits by applying the percentages selected to the benchmark selected.	Application of limits selected to the benchmark selected.	Not done	2 Errors	1 Error	0 Errors			3*	

		Selected the correct limit calculated based on the ROMM assessment performed in WP/B8.	Should have selected the correct limit based on the ROMM assessment performed in WP/B8.	Not done	No	Yes				2*	
		Calculated the performance materiality as 75% of the materiality calculated.	Should have calculated by applying 75% to the overall planning materiality figure.	Not done	No	Yes				2*	
14	B10	Correctly concluded on whether reliance can be placed on the internal control environment of the entity, based on the overall control risk assessment performed in WP/B8.	Conclusion should be based on the overall control risk assessment made in WP/B8.	Not done	No	Yes				2*	
		Selected the correct audit approach to be followed based on the conclusion about whether reliance can be placed on the overall control environment.	Selection should be based on the conclusion made about whether reliance can be placed on the overall control environment.	Not done	No	Yes				2*	
		Selected the correct effect on the nature of the audit procedures to be performed, based on the audit approach selected.	Selection should be based on approach selected.	Not done	No	Yes				2*	
		Selected the correct effect on the timing of the audit procedures to be performed, based on the audit approach selected.	Selection should be based on approach selected.	Not done	No	Yes				2*	
		Selected the correct effect on the extent of the audit procedures to be performed, based on the audit approach selected.	Selection should be based on approach selected.	Not done	No	Yes				2*	
		Selected the correct response in the overall risk responses based on the risks identified and assessed at the overall financial statement level in WP/B7-B8.	Selection should be based on the risks identified and assessed at the overall financial statement level in WP/B7-B8.	Not done	> 4 Errors	3 Errors	2 Errors	1 Error	0 Errors	5*	
		Considered all the required administration and other client-specific considerations, based on the information provided.	All required considerations should have been attended to.	Not done	> 6 Errors	5-6 Errors	3-4 Errors	1-2 Errors	0 Errors	5	
15	B11	Reviewed the audit budget as required.	Should have reviewed the audit budget.	Not done	No	Yes				2	

16	B12	Completed the planning of the analytical review and obtained all explanations from management where required to do so.	Should have obtained all the explanations.	Not done	> 6 Errors	5-6 Errors	3-4 Errors	1-2 Errors	0 Errors	5	
17	B13	Selected the correct reasons for significant accounts selected, based on the methodology provided.	Selection should be correct, based on the methodology provided.	Not done	> 6 Errors	5-6 Errors	3-4 Errors	1-2 Errors	0 Errors	5	
18	B14 – B26	Correctly documented all the identified risks, at the assertion level, for the significant accounts mapped to the specific audit program.	All inherent risk(s) identified at the assertion level and provided should have been documented.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Correctly selected the significant accounts affected by the inherent risk(s), at the assertion level, for the significant accounts mapped to the specific audit program.	Should have linked all the inherent risk(s), at the assertion level, to the relevant significant accounts, as indicated in the information provided.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Correctly linked all identified risks, at the assertion level, to the relevant assertions that affects significant accounts mapped to the specific audit program.	All inherent risk(s) identified and provided, at the assertion level, should have been linked to the relevant assertions as indicated in the information provided.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Correctly assessed the assertions linked to the inherent risk(s) identified, at the assertion level, for the significant accounts mapped to the specific audit program.	Should have assessed all the assertions linked to the inherent risk(s), at the assertion level, based on the assessment provided.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
19	B27 – B30	Correctly documented all the required information with regard to the specific control process (cycle), as required by the audit methodology.	Should have documented all the information provided for the specific control process (cycle).	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
20	B31 – B34	Correctly documented and linked all the identified relevant controls to the assertions they address, for the significant accounts linked to the specific control process (cycle).	Should have documented and linked the relevant controls identified in the information provided, to the assertions they address, for the significant accounts linked to the specific control process (cycle).	Not done	3 Errors	2 Errors	1 Error	0 Errors		4	

		Correctly concluded on the design and implementation for all the identified relevant controls, for the significant accounts linked to the specific control process (cycle).	Should have concluded correctly on the design and implementation for all the identified relevant controls, based on the information provided, for the significant accounts linked to the specific control process (cycle).	Not done	>2 Errors	1 Error	0 Errors			3	
		Correctly assessed the control risk(s), at the assertion level, for all assertions addressed by the relevant controls, for the significant accounts linked to the specific control process (cycle).	Should have correctly assessed the control risk(s), at the assertion level, for all assertions addressed by the relevant controls by applying the table provided in the methodology.	Not done	>2 Errors	1 Error	0 Errors			3	
21	B35	Correctly assessed the control risk(s), at the assertion level, for all assertions where no relevant controls have been identified.	Should have correctly assessed the control risk(s), at the assertion level, for all assertions where no relevant controls were identified, by applying the table provided in the methodology.	Not done	> 6 Errors	5 - 6 Errors	3 - 4 Errors	1 – 2 Errors	0 Errors	5	
22	B36 – B48	Correctly assessed the risk of material misstatement (ROMM) at the assertion level, for each assertion affected, in each significant account, based on the inherent and control risk(s) assessments performed in WP/B14-B26 and WP/B31-B35, by applying the ROMM assessment matrix provided.	Application of inherent and control risk(s) identified, at the overall financial statement level, to the table provided (methodology).	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
23	B49 – B61	Selected the correct audit approach to be followed, at the assertion level, for each assertion affected, in each significant account.	Selection should be based on the conclusion made by applying the table provided in the methodology.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Selected the correct effect on the nature of the audit procedures to be performed, based on the audit approach selected.	Selection should be based on approach selected.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	

		Selected the correct effect on the timing of the audit procedures to be performed, based on the audit approach selected.	Selection should be based on approach selected.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Selected the correct effect on the extent of the audit procedures to be performed, based on the audit approach selected.	Selection should be based on approach selected.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Selected the correct response in the overall risk responses based on the risks identified and assessed at the overall financial statement level in WP/B7-B8.	Selection should be based on the risks identified and assessed at the overall financial statement level in WP/B7-B8.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Considered all the required specific administration and other client-specific considerations, based on the information provided.	All required considerations should have been done.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
24	B62 – B74	Selected the correct sampling method for the specific audit procedures in each audit program.	Should have selected the sampling method based on the selection made in the information provided.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Selected the correct procedures type for the specific audit procedures in each audit program.	Should have selected the procedures type based on the selection made in the information provided.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Documented the procedure descriptions for the specific audit procedures in each audit program.	Should have documented the procedures description as documented in the information provided.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Correctly linked the procedures to the assertions they address, for the specific audit procedures in each audit program.	Should have linked the procedures to the assertions they address based on the information provided.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	

SECTION C: EXECUTING THE AUDIT ENGAGEMENT											
25	Agenda and minutes of kick-off meeting	Correctly updated the agenda for the kick-off meeting with the required information.	Should have updated the agenda template with the required information.	Not done	No	Yes				2	
		Held a kick-off meeting.	Should have held a kick-off meeting.	Not done	No	Yes				2	
		Correctly kept minutes of the kick-off meeting.	Should have kept minutes of the kick-off meeting.	Not done	No	Yes				2	
26	C1	Corrected all the audit misstatements identified and processed.	Should have corrected the balances with the audit misstatements identified as the client agreed that all misstatements identified should be corrected.	Not done	No	Yes				2	
	C1 – C56 & D10	Correctly documented the work performed on each working paper for all the required procedures in the specific audit program.	Should have documented the procedures description provided in the information, as the work that was performed.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Correctly performed all the required procedures in the specific audit program.	Should have performed all the required procedures correctly.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Correctly documented the results on the working papers, for all the required procedures in the specific audit program.	Should have indicated that all the “tests” for all the required procedures have been performed by selecting the ✓ on the working paper.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Correctly concluded on each procedure performed in the working paper, for all the required procedures in the specific audit program.	Should have concluded correctly based on the results of the specific procedure performed, for all the required procedures.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
		Correctly identified all the audit misstatements.	Should have identified the two audit misstatements.	Not done	No	Yes				2	

		Correctly transferred all applicable audit misstatement to the schedule of overs and unders.	Should have transferred the audit misstatements to the schedule of overs and unders.	Not done	No	Yes				2	
SECTION D: COMPLETING THE AUDIT ENGAGEMENT											
27	D1	Correctly identified fraud risks from the fraud risk questionnaire.	Should have identified the fraud risk with regard to sales.	Not done	No	Yes				2	
	D1.1	Correctly concluded that all fraud risk(s) identified has(have) been addressed.	Should have concluded that the required procedures addressed the fraud risk identified.	Not done	No	Yes				2	
		Correctly referenced (linked) the fraud risk to the fraud risk procedures performed as part of the audit procedures in section C.	Should have made the link between the fraud risk with regard to revenue and the audit procedures.	Not done	No	Yes				2	
28	D2	Correctly concluded on whether the entity is a going concern.	Should have concluded that the entity is a going concern, based on the information provided.	Not done	No	Yes				2	
		Correctly concluded on whether further audit procedures are required.	Should have concluded that no further audit work is required, based on the information provided.	Not done	No	Yes				2	
29	D3	Correctly concluded on whether sufficient appropriate audit evidence have been obtained regarding compliance with the provisions of those laws and regulations generally recognised to have a direct effect on the determination of material amounts and disclosures in the financial statements.	Should have concluded correctly based on the work performed in WP/C26.	Not done	No	Yes				2	
30	D4	Correctly concluded on whether any litigation claims against the company have been identified and, if so, have they been appropriately included in the financial statements.	Should have concluded correctly based on the work performed in WP/C7.	Not done	No	Yes				2	
31	D5	Correctly identified all the related party transactions.	Should have identified all the related party transactions.	Not done	No	Yes				2	

		Correctly concluded on, irrespective of whether the applicable financial reporting framework establishes related party requirements, was an understanding of related party relationships and transactions obtained as required.	Should have concluded based on the work performed in WP/C11-C12.	Not done	No	Yes				2	
32	D6	Correctly concluded on whether sufficient appropriate audit evidence about whether events occurring between the date of the financial statements and the date of the auditor's report that require adjustment of, or disclosure in, the financial statements are appropriately reflected in those financial statements in accordance with the applicable financial reporting framework.	Should have concluded based on the information provided.	Not done	No	Yes				2	
		Correctly concluded that, if applicable, the audit team responded appropriately to facts that became known to the auditor after the date of the auditor's report which, had they been known to the auditor at that date, might have caused the auditor to amend the auditor's report.	Should have concluded based on the information provided.	Not done	No	Yes				2	
33	D7	Correctly documented the required information pertaining to the journal entry process.	Should have documented the process based on the information provided.	Not done	>2 Errors	1 Error	0 Errors			3	
	D8	Correctly performed the journal entry testing.	Should have performed all the required procedures with regard to journal entry testing correctly.	Not done	>2 Errors	1 Error	0 Errors			3	
34	D9	Correctly concluded on whether the benchmark changed that was applied to determine the planning materiality figure.	Should have concluded that the benchmark did not change.	Not done	No	Yes				2	
		Correctly concluded on whether any issues arose during the audit that would have resulted in the auditor's adjusting of the final materiality figures.	Should have concluded that no such issues took place.	Not done	No	Yes				2	
		Correctly calculated the final materiality figures.	Should have determined that the final materiality figures did	Not	No	Yes				2	

			not need changing from the overall planning materiality figures.	done							
36	D10 - D11	Correctly concluded on whether there are any uncorrected audit misstatements that are individually quantitatively material.	Should have concluded “no” as there are no uncorrected audit misstatements.	Not done	No	Yes				2	
		Correctly concluded on whether there are uncorrected audit misstatements that in aggregate are quantitatively material.	Should have concluded “no” as there are no uncorrected audit misstatements.	Not done	No	Yes				2	
		Correctly concluded on whether there are any uncorrected audit misstatements that are individually qualitatively material.	Should have concluded “no” as there are no uncorrected audit misstatements.	Not done	No	Yes				2	
		Correctly concluded on whether there are any uncorrected audit misstatements that are in aggregate qualitatively material.	Should have concluded “no” as there are no uncorrected audit misstatements.	Not done	No	Yes				2	
		Correctly concluded on whether there are any uncorrected audit misstatements that are individually quantitatively pervasive.	Should have concluded “no” as there are no uncorrected audit misstatements.	Not done	No	Yes				2	
		Correctly concluded on whether there are any uncorrected audit misstatements that are in aggregate quantitatively material pervasive.	Should have concluded “no” as there are no uncorrected audit misstatements.	Not done	No	Yes				2	
		Correctly concluded on whether there are any uncorrected audit misstatements that are individually qualitatively pervasive.	Should have concluded “no” as there are no uncorrected audit misstatements.	Not done	No	Yes				2	
		Correctly concluded on whether there are any uncorrected audit misstatements that are in aggregate qualitatively pervasive.	Should have concluded “no” as there are no uncorrected audit misstatements.	Not done	No	Yes				2	
37	D12	Correctly agreed and reconciled the financial statements, including their accompanying notes,	Should have tied in all the balances in die financial	Not	> 9	7-9	4-6	1-3	0	5	

		to the underlying final trial balance (WP/C1) and audit working papers by referencing all the information in the financial statements to the trial balance and audit working papers.	statements provided and the relating noted to the final balances after audit adjustments as well as to the relevant working papers.	done	Errors	Errors	Errors	Errors	Errors		
38		Correctly agreed to prior year balances to the prior year signed financial statements.	Should have agreed the prior year balances to the signed financial statements.	Not done	> 9 Errors	7-9 Errors	4-6 Errors	1-3 Errors	0 Errors	5	
39	D13	Correctly concluded on whether the financial statements are accurate and complete and in line with IFRS and any other regulatory requirements.	Should have concluded “yes”.	Not done	No	Yes				2	
40	D14	Obtained the management representation letter.	Should have obtained the management representation letter.	Not done	No	Yes				2	
41	D15	Correctly concluded that sufficient and appropriate audit evidence was obtained in providing support for the conclusions on which the auditor’s opinion is based.	Should have concluded “yes”.	Not done	No	Yes				2	
42	D16	Correctly concluded on whether the audit team complied with all leadership responsibilities for quality within the firm.	Should have concluded “yes”.	Not done	No	Yes				2	
		Correctly concluded on whether the audit team complied with all relevant ethical requirements.	Should have concluded “yes”.	Not done	No	Yes				2	
		Correctly concluded on whether the audit team performed all the client acceptance and continuance of client relationships requirements.	Should have concluded “yes”.	Not done	No	Yes				2	
		Correctly concluded on whether the audit team complied with all human resources requirements.	Should have concluded “yes”.	Not done	No	Yes				2	
		Correctly concluded on whether engagement performance evaluations will performed at the end of the engagement.	Should have concluded “yes”.	Not done	No	Yes				2	

		Correctly concluded on whether continued monitoring took place throughout the audit.	Should have concluded “yes”.	Not done	No	Yes				2	
		Correctly concluded on whether all the working papers are complete and whether all audit evidence was obtained.	Should have concluded “yes”.	Not done	No	Yes				2	
		Correctly concluded on whether all the work was sufficiently cross referenced to the trial balance and the financial statements.	Should have concluded “yes”.	Not done	No	Yes				2	
		Correctly concluded on whether all the work was reviewed by the engagement partner and the engagement manager as required.	Should have concluded “yes”.	Not done	No	Yes				2	
SECTION E: REPORTING AND CONCLUDING ON THE AUDIT ENGAGEMENT											
43	E1	Correctly determined the audit opinion.	Should have determined the audit opinion by applying the decision tree provided.	Not done	No	Yes				2	
	E2	Correctly completed the audit report template.	Should have completed all the required information in the audit report template.	Not done	> 6 Errors	5-6 Errors	3-4 Errors	1-2 Errors	0 Errors	5	
44	E3	Appropriately communicated the observation of the control deficiency noted.	Should have documented the control deficiency noted.	Not done	No	Yes				2	
		Appropriately communicated the risk(s) pertaining to the control deficiency noted.	Should have identified a risk(s) due to the control deficiency noted.	Not done	No	Yes				2	
		Made appropriate recommendation(s) of what management should implement to address the control deficiency noted.	Should have made appropriate recommendation(s) of what management should implement to address the control deficiency noted.	Not done	No	Yes				2	

GENERAL									
General	All working papers have been completed.	None	Only some	Yes				2	
General	All working papers requiring review have been reviewed.	None	Only some	Yes				2	
General	All the documentation required to be filed in the permanent section of the audit file, has been filed.	None	Only some	Yes				2	
General	All team members have completed the time summary spread sheet.	None	Only some	Yes				2	
General	All team member assessments have been completed.	None	Only some	Yes				2	
General	The audit file was professionally and neatly presented.	Not done	No	Yes				2	
TOTAL MARKS								350	
FINAL GROUP PERCENTAGE FOR SIMULATION									

*Principle mark, based on applying the audit teams' findings to the relevant decision to be made.

Annexure F

Audit simulation flyer



FINANCE MASTER (PTY) LTD

An audit simulation performed by R&R Auditors Inc.

What is the purpose?

To provide all participants with an exciting, refreshing and memorable actual audit experience.

What's in it for you?

- Participants are provided with an opportunity to obtain a holistic view of the audit process.
- Participants will have an improved ability to apply the audit principles, as set out in the International Standards on Auditing (ISA), in any exam question or actual audit.

What do you need in order to complete the audit simulation?

- The data disk provided.
- Access to a computer and printer.
- Teamwork ability.
- A positive attitude.

What is expected of your audit team?

To complete the audit of Finance Master (Pty) Ltd by following the instructions in the participant guide included on the data disk provided.

What do audit teams need to submit?

- One complete audit file (hardcopy).
- The data disk provided.

Where do you submit?

- Potchefstroom Campus – Building E5, room 105.
- Vanderbijlpark Campus – Building 4, room 117-B.

When is the deadline?

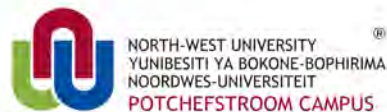
30 September 2014 @ 12:00 pm

What if teams have any questions whilst performing the audit simulation?

- No assistants are provided from lecturers or academic clerks.
- Like the Finance Master (Pty) Ltd Facebook page if you have any questions and subsequently post these questions on the page.
- All questions posted will be answered on a daily basis.



Tell me, I forget. Show me, I remember. Involve me, I understand. Ancient Chinese Proverb



Annexure G

Audit simulation banner

FM

FINANCE MASTER (PTY) LTD

FINANCE MASTER (PTY) LTD
An audit simulation performed by
R&R Auditors Inc.

AUDIT
FINANCE
MASTER (PTY) LTD
R&R AUDITORS
INC.
INDEPENDANT
GOVERNANCE
RISK IDENTIFIED
INTERNAL ACCOUNTING
TRANSACTIONS
FRAUD
CALCULATION
STATEMENTS
LITIGATION, CLAIMS AND ASSESSMENT
SCOPE AND SCALING
MANAGEMENT
COST
JOURNAL ENTRY
COMPANIES

Tell me, I forget.
Show me, I remember.
Involve me, I understand.
Ancient Chinese Proverb

Annexure H

Prezi presentation

A word cloud centered on the word "AUDIT" in large, bold, black letters. Surrounding "AUDIT" are various terms in different sizes and colors (black, orange, red, grey): "SCOPE AND SCALING", "FINANCE", "MASTER (PTY) LTD", "LITIGATION, CLAIMS AND ASSESSMENT", "FRAUD", "FINANCIAL", "INDEPENDANT", "R&R AUDITORS INC.", "RISK IDENTIFIED", "INTERNAL ACCOUNTING", "GOVERNANCE", "TRANSACTIONS", "CALCULATION", "STATEMENTS", "JOURNAL ENTRY", "COST", "MANAGEMENT", "COMPANIES".

Below the word cloud is the logo for Finance Master (PTY) LTD, which consists of a black circle with the letters "FM" in white, flanked by two black banners.

FINANCE MASTER (PTY) LTD
An audit simulation performed by R&R Auditors Inc.
Tell me, I forget – show me, I remember – involve me, I understand, – Ancient Chinese Proverb

At the bottom of the slide, there are three logos: R&R auditors inc. (with a stylized "R&R" logo), the North-West University logo (a stylized "U" in blue and green), and the text "NORTH-WEST UNIVERSITY YUNIBESITI YA BOKONE-BOPHIRIMA NOORDWES-UNIVERSITEIT POTCHEFSTROOM CAMPUS".

A thick, wavy red line runs across the bottom of the slide, separating the main content from the logos.

WELCOME

To the audit simulation of Finance
Master (Pty) Ltd (the client) to be
performed by
R&R Auditors Inc. (the participants)



Finance Master (Pty) Ltd profile



Registered as a private company on 1 January 2012 by Jay Pritchett and has since then been selling the SHARP200 financial calculator.

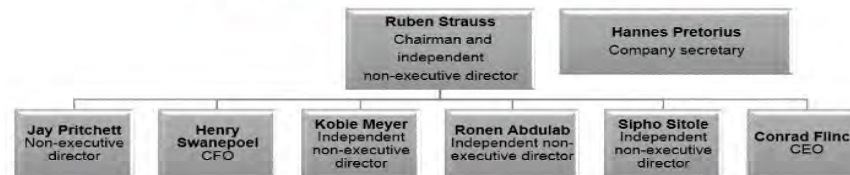
Jay Pritchett bought all the shares shares in the company for R210 000 on 1 January 2012.



Management team



Board of directors



Suppliers



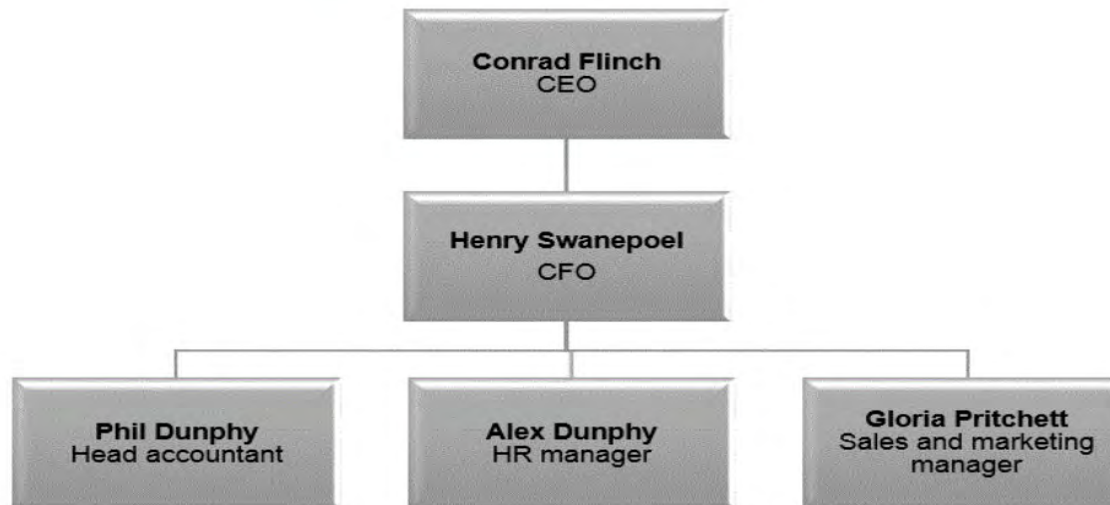
Customers



Other consumables suppliers



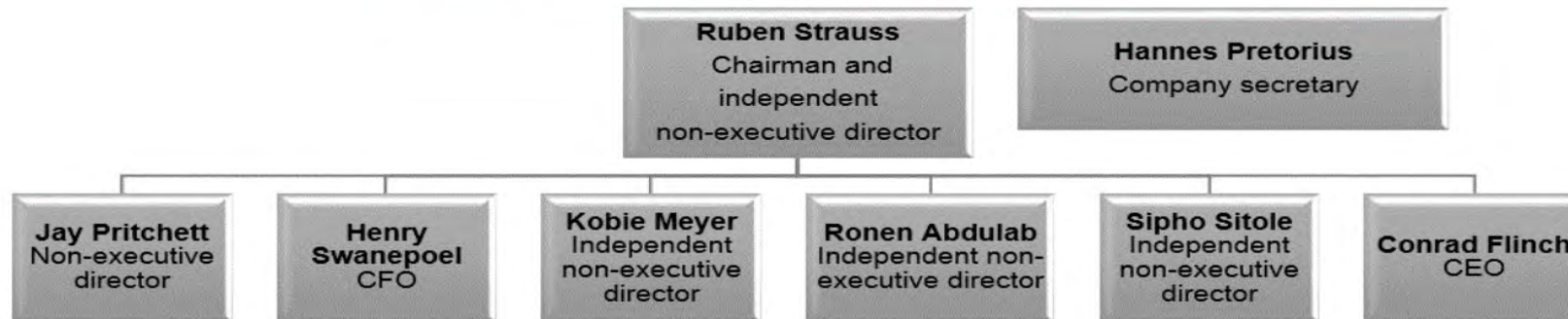
Management team



Company



Board of directors



Other consumables suppliers

Suppliers



Customers



Other consumables suppliers

Pay & Pick LTD

SundayNews
NEWSPAPER INC



Tollkom Ltd

MASTER  CATERERS

 **Askom**

 **EXCEL INC.**

 **Sanpam**
(PTY) LTD



R&R Auditors Inc. profile



Well-established audit firm situated in Potchefstroom

**Established by the managing partner, Jolene McGregor
10 years ago**

**Jolene McGregor, with
assistance of the engagement
manager, Peter Smith, won the
audit of Finance Master (Pty)
Ltd for the year ending
31 December 2013.**



Audit teams



eFundi



**NORTH-WEST UNIVERSITY
YUNIBESITHI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT**

What is the purpose of this simulation project?



To provide all participants with
an exciting, refreshing and
memorable actual audit
experience.

What's in it for you?

- Participants are provided with an opportunity to **obtain a holistic view of the audit process.**
- Participants will have an **improved ability to apply the audit principles, as set out in the International Standards on Auditing (ISA), in any exam question or actual audit.**
- **CTA preparation.**



What do you need in order to complete the audit simulation?

- The data disk provided.
- Access to a computer & printer.
- A positive attitude.
- Teamwork ability.



What is expected of your audit team?

To complete the audit of Finance Master (Pty) Ltd by following the instructions in the participant guide included on the data disk provided.

Where
to start?





1. Participant guide



2. Simulation admin



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© Mikhail Mishchenko

3. Client information and other documents requested

4. Working paper templates



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1. Participant guide

Contains all instructions and guidance needed for the tasks ahead. In order to successfully perform the audit simulation, participants are advised to read this guide from start to finish.



Participant guide

The participant guide is structured in the following manner:

Section A: Pre-engagement activities.

Section B: Planning the audit engagement.

Section C: Executing the audit engagement.

Section D: Completing the audit engagement.

Section E: Reporting and concluding on the audit engagement.

For the purpose of this simulation, each section is structured in the same manner and divided into separate parts based on the steps in the audit process. Each part consists of several action icons and will aid the participants to successfully perform the relevant tasks.

ACTION ICON	PURPOSE
 Client and introductory information required for the specific section	Information that is needed to perform the task(s).
 Audit requirements and methodology	The audit methodology and other explanatory information to be applied so as to perform the task(s).
 Required task(s)	The task(s) to be completed.
 Purpose of task(s)	The purpose (objective) of the auditor in performing the task(s).
 Working paper template to be completed	The working paper template(s) to be completed for the task(s).
 Task allocation between team members	An indication of which members of the audit team should perform which task(s).
 Required time to complete the tasks for the specific section	The estimated timeframe to complete the task(s).

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The simulation admin folder contains a variety of documents that will be used throughout the audit simulation. During the different sections of the audit simulation, participants will be referred to the relevant documents.

2. Simulation admin



File structure guide
Required task checklist
Team members assessment
File index



Time sheet summary
template



Kick-off meeting agenda



Engagement partner electronic signature
Engagement manager electronic signature
Client authorised signatory electronic signature

3. Client information and other documents requested



All the client prepared documents and other documents (audit evidence) required to complete the audit



Management responses and other inquiries made to the client during the audit.

This folder contains a variety of client documents needed to perform the tasks for each section of the audit simulation.

4. Working paper templates

All the working paper templates required to perform the tasks have been provided to the audit team.



C17 - C24 - Audit procedures workbook.xlsx - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

Clipboard Font Alignment Number Styles Cells Editing

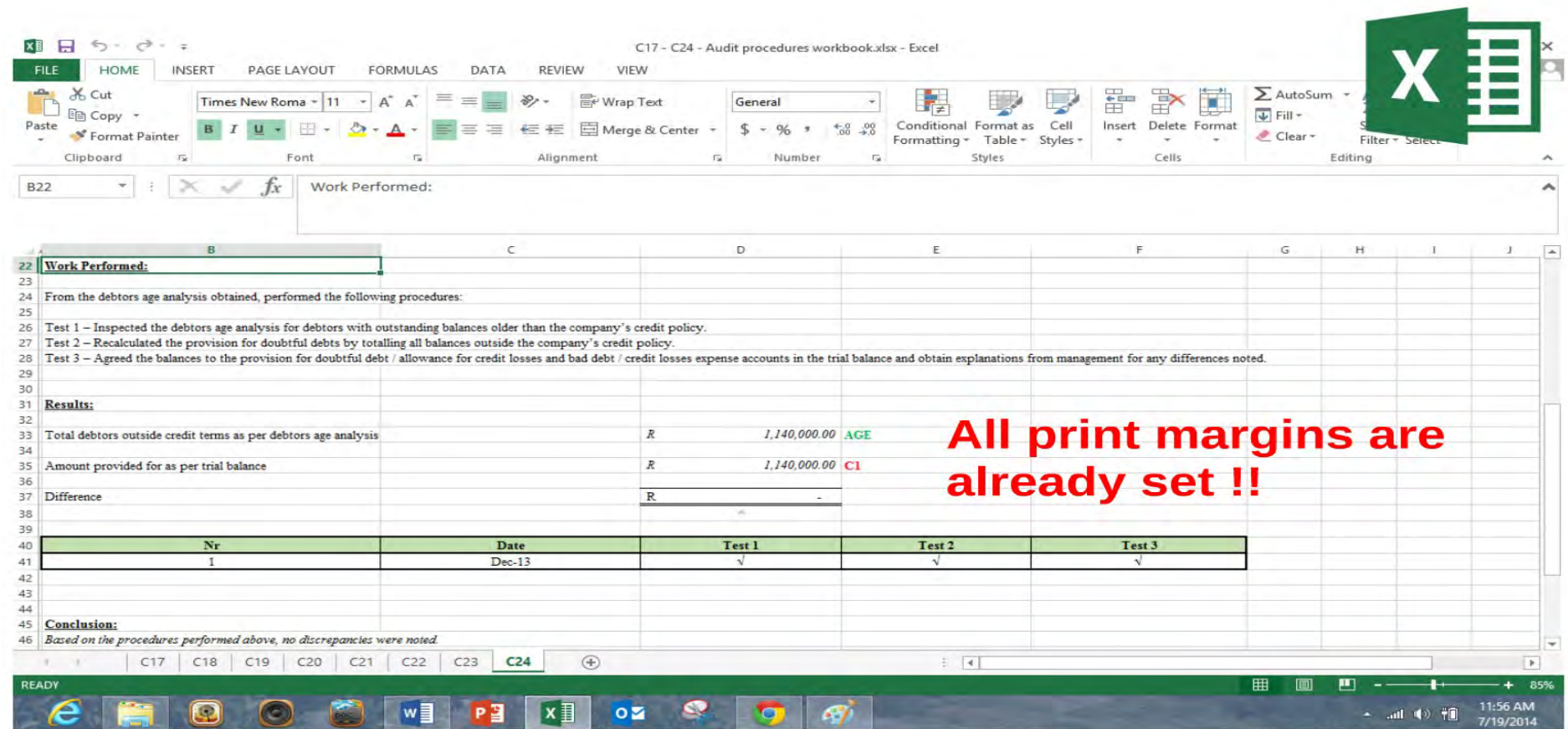
D41 [Select if test was performed]

	B	C	D	E	F	G	H	I	J
31	Results:								
32									
33	Total debtors outside credit terms as per debtors age analysis		1 [Insert amount as per age analysis] AGE						
34									
35	Amount provided for as per trial balance		[Insert amount as per trial balance] C1 2						
36									
37	Difference		3 #VALUE!						
38									
39									
40	Nr	Date	Test 1	Test 2	Test 3				
41	1	Dec-13	[Select if test was performed]	[Select if test was performed]	[Select if test was performed]				
42			NIA	4					
43									
44									
45	Conclusion:								
46	[Insert conclusion here]								
47									
48									
49									
50									
51	Tick Legend: 5								
52									
53	✓		Test performed successfully.						
54	AGE		Traced and agreed to debtors age analysis.						
55			Casted correctly.						

READY

12:13 PM 7/19/2014





Work Performed:

From the debtors age analysis obtained, performed the following procedures:

Test 1 – Inspected the debtors age analysis for debtors with outstanding balances older than the company's credit policy.
 Test 2 – Recalculated the provision for doubtful debts by totalling all balances outside the company's credit policy.
 Test 3 – Agreed the balances to the provision for doubtful debt / allowance for credit losses and bad debt / credit losses expense accounts in the trial balance and obtain explanations from management for any differences noted.

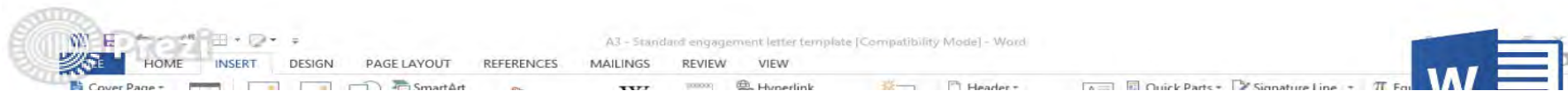
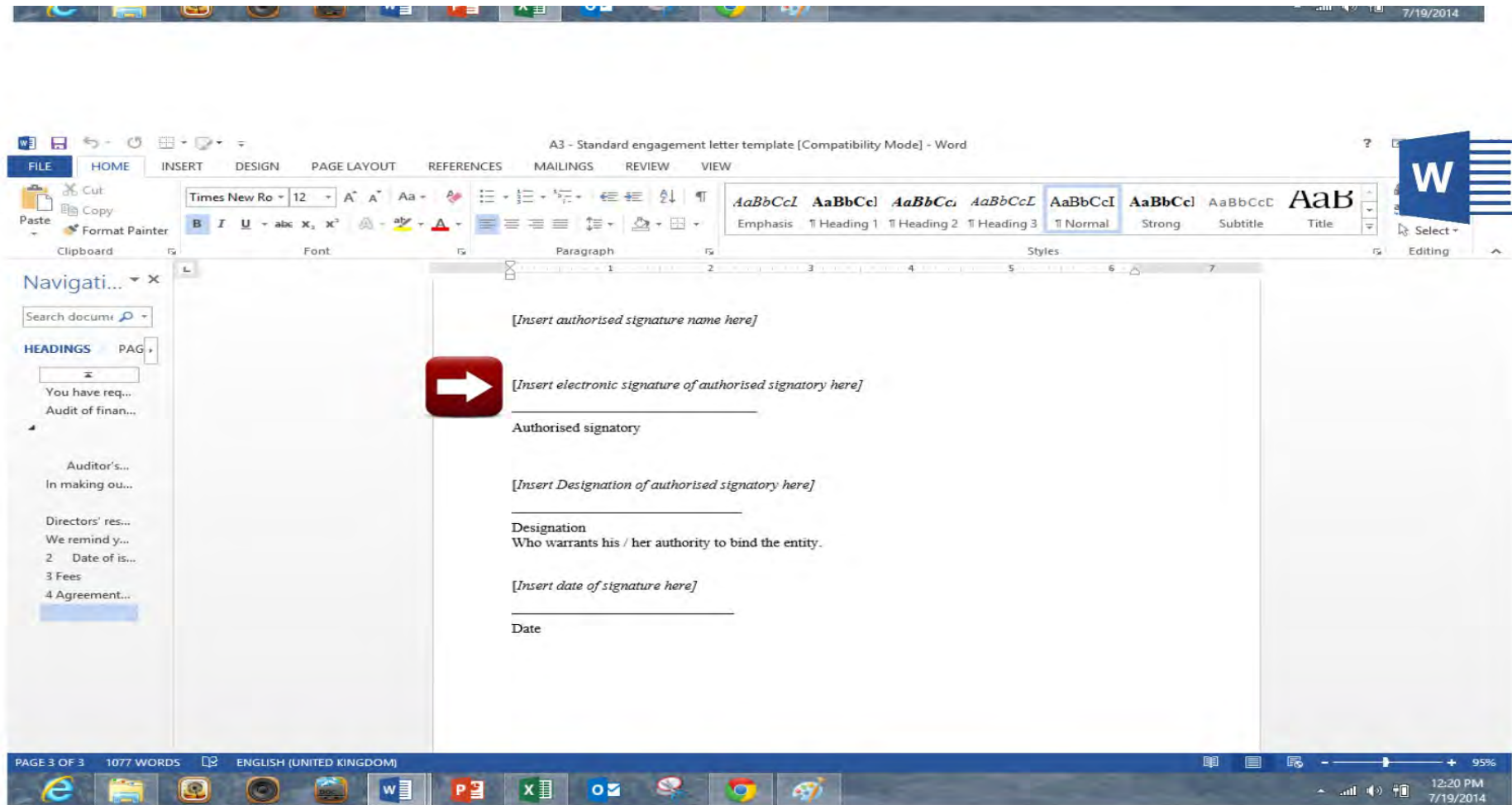
Results:

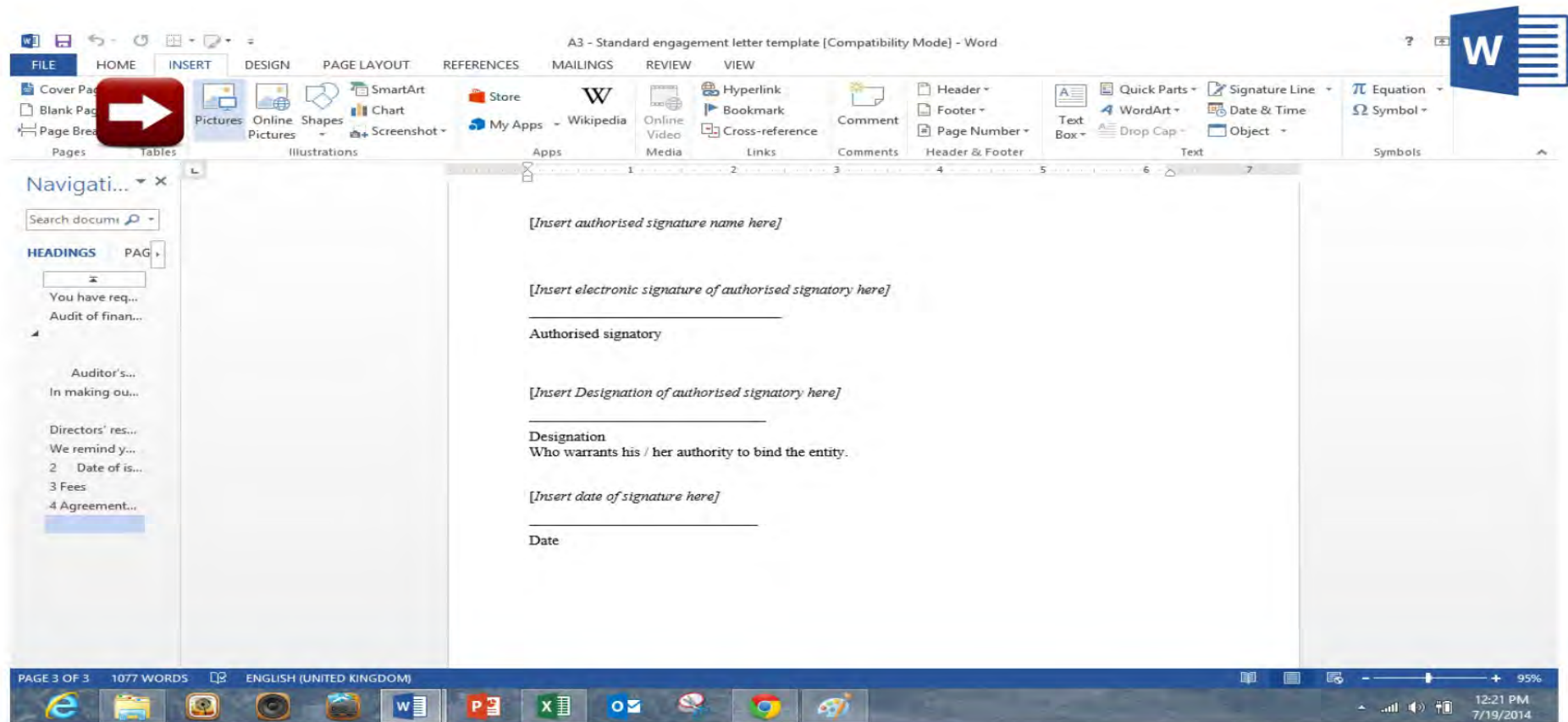
Total debtors outside credit terms as per debtors age analysis	R	1,140,000.00	AGE
Amount provided for as per trial balance	R	1,140,000.00	C1
Difference	R	-	

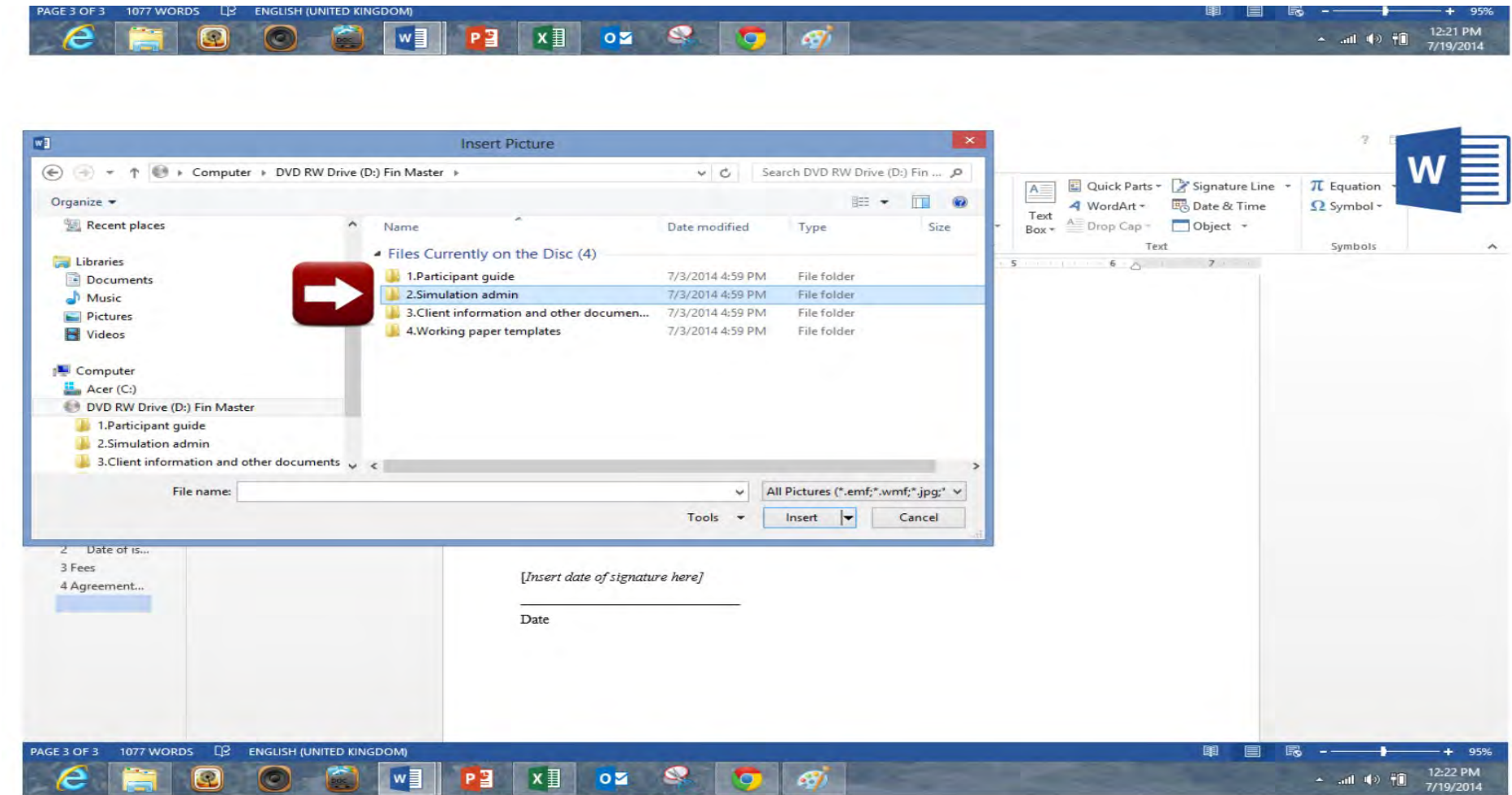
Conclusion:
 Based on the procedures performed above, no discrepancies were noted.

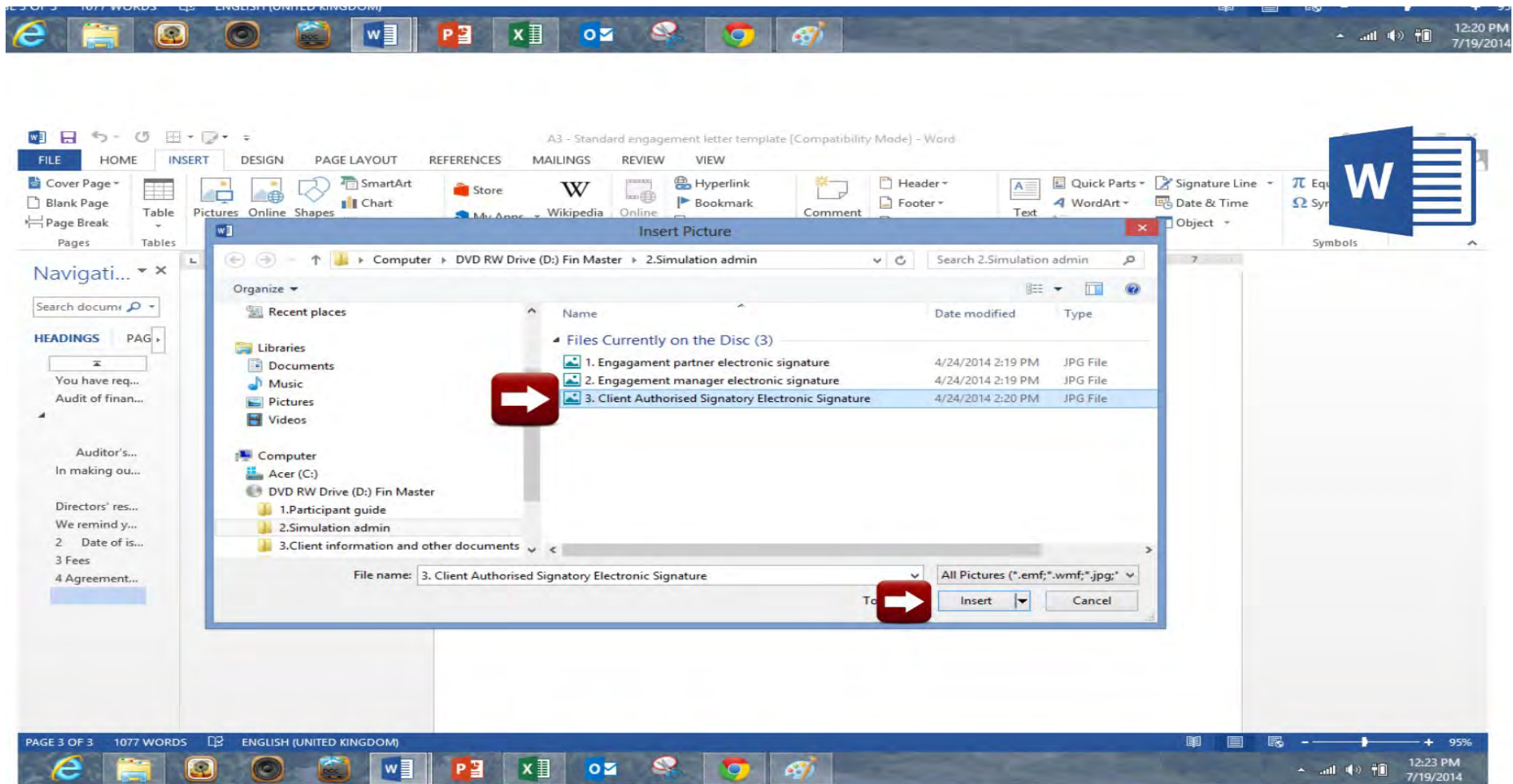
Nr	Date	Test 1	Test 2	Test 3
1	Dec-13	√	√	√

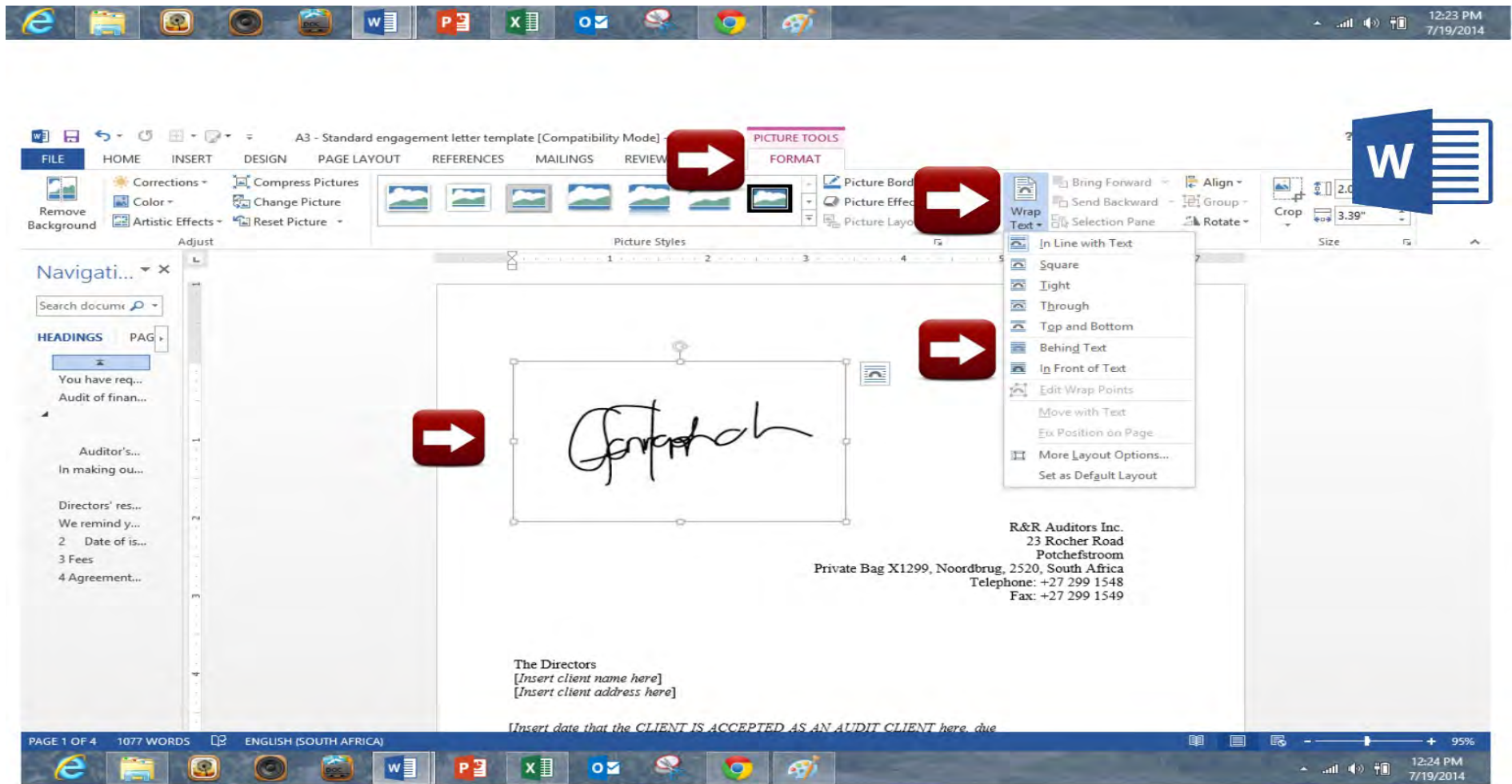
Prezi

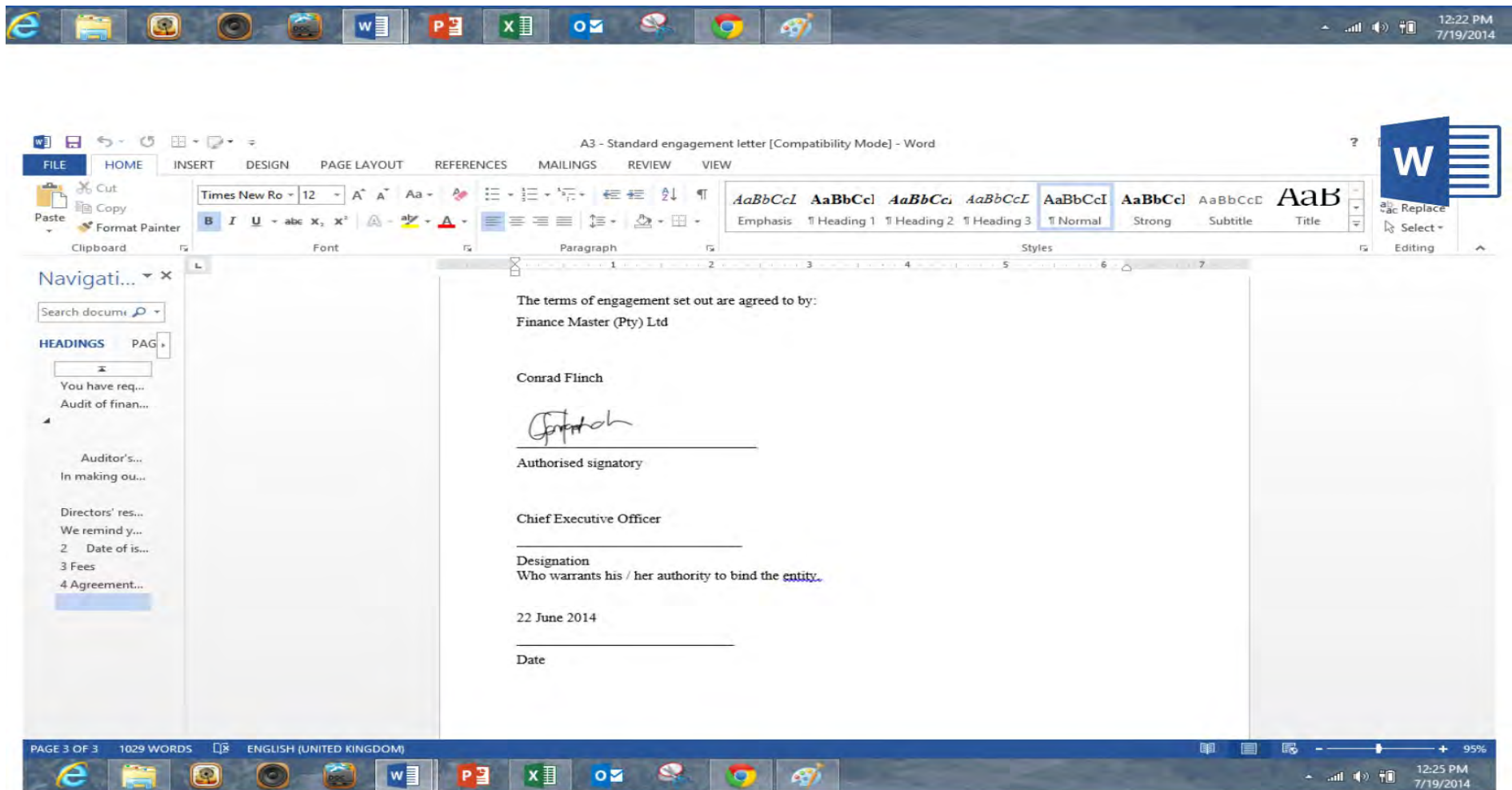












What do audit teams need to submit?

- **One complete** audit file (hardcopy) per group.
- The **data disk** provided.



When do you need to submit?



Section A - B: 29 August 2014 @ 12:00 pm
Section C - E: 30 September 2014 @ 12:00 pm

Where do you submit?

- Potchefstroom Campus – Building E5, room 105.
- Vanderbijlpark Campus – Building 4, room 117-B.



What if teams have any questions whilst performing the audit simulation?

- **No assistants** are provided from **lecturers** or **academic clerks**.
- **Like the Finance Master (Pty) Ltd Facebook page** if you have any questions and subsequently **post** these **questions** on the **page**.
- All questions posted will be answered on a **daily basis**.



How are teams assessed?

As is the norm in practice, the audit teams' performance will be evaluated at the end of the audit. On completion of this audit simulation, **audit team members will be assessed twice** as follows:

1. Marking of the **completed audit file** by the facilitator (group mark).
2. Audit team members' assessment (**ATA**).



The facilitator will mark the completed audit file based on a set marking plan. It is **important** to **submit** a **complete audit file**, because a group mark is also awarded for the file.

Final mark per team member

Group mark x percentage (%) obtained in the **ATA** = **Final mark** for audit team member



My audit team on Facebook



Each team should post the following on the Facebook page in addition to any questions:

- Team slogan.
- Team name.
- Photos whilst performing the audit.
- Group photo.

Slogan and team name:

Potch - Team 1 - "Slogan/Name".

Vaal - Team 1 - "Slogan/Name".

Photos:

Comment on the photos by adding your team name.



Logistics

- **Team member 1** of each team is the auditor in charge (**AIC**) of each team.
- The **AIC** should come and **collect** the **data disk** after presentation.
- The **AIC** is **responsible** to ensure that the audit is completed on time. It is therefore important to follow up with all team members on a frequent basis.
- The **AIC** should **ensure** that the **deadlines** for submission **are met** and that the file is submitted **on time**.
- The **AIC** should come and collect the file after the first submission deadline on **25 September 2014** as to file Section C - E.

AIC responsible to have a meeting shortly after the presentation as to ensure that all the team members are able to download from the data disk as well as to set the work plan.



Some tips.....

What should you do at this first meeting organised by the AIC???

- Download all the information on the data disk onto your computer.
- As a team, work through the participant guide to obtain an understanding of what needs to be done.
- Establish a work plan for all the required tasks.
- Set deadlines for each required task as indicated in the participant guide.



General.....

- When completing the audit, attempt to work together as the majority of the tasks are not the sole responsibility of one team member.

DO NOT LEAVE EVERYTHING TO THE LAST MINUTE AS YOU WILL BE PUTTING TREMENDOUS STRAIN ON YOURSELVES !!!!!!!!!!!!!!!





This presentation will be available on efundi next week!!

Annexure I

Simulation introduction photo collage



Annexure J

Facebook page URL and QR code

Facebook page URL	https://www.facebook.com/pages/Finance-Master-Pty-Ltd/315956025234928?ref=bookmarks
QR code	

Annexure K

Collage of audit team names and slogans



Annexure L

Collage of audit team photos



Annexure M

Newly developed audit simulation and supporting substance

