

CHAPTER 1

THE CHALLENGES FACING AUDITING EDUCATION

Keywords: accounting education; auditing education; educational game; experiential learning; information technology

1.1 INTRODUCTION

The recent worldwide recession and economic failure have placed the focus on accounting education and specifically the education of auditors. In 2003, PricewaterhouseCoopers (PwC) (2003, p. 1) already noted that these are challenging times for the accounting profession and further stated that “at this critical juncture, we choose to focus on accounting education because of the important role it plays in rebuilding the public trust”. More recent researchers still echo this plea (Buckhaults & Fisher, 2011; Fouché, 2011).

In South Africa, the education of chartered accountants – CA(SA) – is mainly governed by the South African Institute for Chartered Accountants (SAICA), South Africa’s regulating body for chartered accountants. To pursue a career as a chartered accountant, one needs to enrol for a BCom Accounting degree or an equivalent accredited undergraduate qualification at a SAICA-accredited university, followed by a Certificate in the Theory of Accounting (CTA). These theoretical studies cover the basic areas of accounting, auditing, taxation and financial management.

According to SAICA (2013a) on the official SAICA website, upon completion of a CTA, the student is eligible to enter into a three-year learnership with a Registered Training Office (RTO) (to specialise in auditing) or an Approved Training Organisation (ATO) (to specialise in financial management).

This study focused on the first four years of theoretical studies during which the prospective chartered accountant is introduced to and has to master the theory, principles and procedures involved in auditing.

This chapter gives a brief overview of the origin, definition and necessity of auditing, as found in practice, and briefly describes the auditing process. After this introduction, the

focus shifts to the education side in which the qualification structure for chartered accounting is highlighted along with the challenges posed by this structure, challenges inherent to the subject and reasons why students struggle to master auditing as a theoretical subject.

The chapter discusses the problem statement, research objectives and research methodology. Lastly, an overview of the chapters to follow is given.

1.2 AUDITING IN PRACTICE

To examine the many challenges facing modern-day auditing education, one first has to understand the purpose of the educational programme, and to this end, one has to understand the purpose of auditing itself, in other words where, how and why the theory is applied in the day-to-day job context.

1.2.1 What is auditing?

According to SAICA (2013b), an audit is an assurance engagement. This means that an auditor will set out to evaluate a certain subject matter against a certain set of criteria in order to provide an opinion (which vests the users of financial statements with a certain level of assurance) regarding the reasonableness of the subject matter (in the case of an audit, usually financial statements).

1.2.1.1 The origin of auditing

The word 'auditor' is derived from the Latin word "audire" (to hear) (*Collins English Dictionary*, 2013). According to Jackson and Stent (2012), auditing originated in ancient times, when accounting took place orally between a master and servant/steward. In this way, the master would listen to the servant's account of what he had done with and how he had managed the master's cattle/crops/money (in other words, assets) and question him on his accounts. In this way, the master was the listener or auditor.

When the skills of writing and bookkeeping evolved, stewards would keep written records instead of relaying everything orally. Masters who did not wish to trouble themselves with examining these written records appointed a trusted independent person to satisfy themselves of the truth of the steward's bookkeeping, and so the foundations for modern auditing were laid.

1.2.1.2 Defining auditing

Audit, as a noun, is defined in the *Collins English Dictionary* (2013) as an inspection, correction, and verification of business accounts, conducted by an independent qualified accountant.

Maltby (2001) concurs with this definition by describing auditing as a process of scientific investigation. According to this view, a set of financial accounts represents a series of assertions about the existence and value of assets and liabilities, which the auditor tests through a process of sampling evidence. Therefore, the auditor's inspection and investigation are standardised within an overall framework of professional pronouncements that ensures that audit judgement is exercised within a shared set of definitions of concepts such as 'materiality' and 'risk', which can be quantified. This is done in order to regulate a profession ruled by professional judgement in such a way that consistency of audit opinions is enhanced and thereby serves to enhance the confidence the public has in the auditor's opinion. This is in line with the definition of an audit as an assurance engagement (SAICA, 2013b).

According to the International Framework for Assurance Engagements, an assurance engagement means 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 (SAICA, 2013b).

Power (1995) agrees with this viewpoint, stating that an audit invests the audit report with particular value as an objective, authoritative statement and Pentland (1993) elaborates by describing an audit as a ritual for the production of 'comfort'. Ravenscroft and Williams (2004) describe auditing as essentially a communication tool to stakeholders and a fundamental support to corporate governance.

Ravenscroft, Rebele, St Pierre and Wilson (2008, p. 5) neatly summarise and extend these definitions by stating that "auditing, in addition to existing as an academic discipline, also exists as a field of professional practice within which education and training are of paramount importance to the public interest".

It is therefore evident that accounting education is of paramount importance to the public, but that it is also complex. Clikeman (2012) views auditing as a complex task in which auditors must understand the client's operations, assess risk, gather evidence and evaluate the materiality of misstatements. This is in line with Power's (1995) view of

auditing as a complex competence that requires special training and skills and accordingly can command high fees.

From the above it is apparent that the definition of auditing includes all of the following factors:

Auditing is a complex task involving planning, investigation, performance of procedures and the formulation of an audit opinion, but one that is important to the public.

Future auditors need to possess the complex skills involved in a profession dominated by professional judgement, yet standardised by professional pronouncements, all the while enhancing the public's confidence in the profession as a communication and assurance tool.

1.2.1.3 *Auditing as a necessity*

There are two types of assurance engagements, namely statutory assurance engagements and non-statutory assurance engagements. Statutory assurance engagements are compulsory audits that have to take place in terms of legislation, for example the Companies Act (61 of 2008) and the Financial Institutions Act (6 of 2005). These acts require some businesses (such as public companies, financial institutions and some private companies with large public interest scores) to be audited annually in order to protect the public.

Non-statutory assurance engagements are not compulsory, but elective. The reasons that a business might elect to have its financial statements audited are numerous, for example a provider of finance might require that a business entity requiring finance present audited financial statements in order to qualify for a loan.

Jackson and Stent (2012) list these three main reasons for the need for auditors:

- The split between ownership and management introduces the need for an independent assurance giver to assure the owners that management are doing their job and doing it well.
- Enhanced confidence in the reliability and credibility of a company's financial information assists in directing the decisions of investors.
- The world at large requires accountability and sound corporate governance. Professional accountants play a key role in meeting this demand.

1.2.1.4 Factors that have an impact on the current auditing environment

The following factors have an impact on the current auditing environment:

- The auditing profession often being perceived as the first at fault in corporate failures, as proven by extensive literature on the expectations gap (Drake, 2011)
- The globalisation of auditing standards through the development of International Standards on Auditing (ISAs) (Drake, 2011)
- The integration of information technology into virtually all business systems, business processes, the auditing profession and the accounting curriculum (International Federation of Accountants [IFAC], 2006; Wessels, 2004).

The combination of these factors serves to pressurise the entire accounting sector, which is already a complex profession, and especially the auditing profession, in such a way that professional excellence has become not an option, but a necessity. This statement holds true for auditors in practice, as well as education.

1.2.1.5 The auditing process

After presenting what auditing is and why it is important, it is further important to understand the auditing process. The auditing process is defined and set in different stages by various authors and various textbooks and is discussed next.

According to Marx, Van der Watt, Bourne and Hamel (2012), the audit process consists of a series of procedures and activities that are performed in order to obtain evidence to support the auditor's opinion regarding whether the financial statements are prepared, in all material respects, in accordance with an applicable financial reporting framework.

In South Africa, the ISAs provide guidance on how the audit process is to be conducted. These standards do not contain detailed audit procedures, but instead aim to set a standard. The logic is then that an auditor will do everything necessary in order to meet these standards and will therefore plan and perform an audit of sufficiently high standard.

According to Jackson and Stent (2012), as adapted from the ISAs of 2010, the audit process consists of the following stages:

STAGE 1: PRELIMINARY ENGAGEMENT ACTIVITIES

During this stage, the auditor performs certain procedures in order to establish whether the auditor wishes to continue a relationship with an existing client or accept a new client. ISA 210 and ISA 220 provide specific guidance during this stage.

STAGE 2: PLANNING

During this stage, the risk of material misstatements in the financial statements is assessed, materiality is determined and an audit strategy and audit plan are prepared accordingly. ISA 300, ISA 315 and ISA 320 provide specific guidance during this stage.

STAGE 3: PUTTING THE PLAN INTO ACTION

During this stage, the auditor responds to the risk, both at financial and assertion level, by performing the audit procedures that were determined during the planning stage and by complying with the ISAs. ISA 330, ISA 500 and ISA 530 provide specific guidance during this stage.

STAGE 4: CONCLUDING

During this stage, audit evidence obtained is evaluated and an audit report is prepared accordingly. ISA 700 and ISA 705 provide specific guidance during this stage.

On its official website, Deloitte (2012) presents the following scheme to summarise the audit process:

Initial Planning Process

- Assess and respond engagement risk
 - Preliminary assessment of the investment management process
- Select engagement team
- Understand your business
- Understand your accounting process
 - Understand entity level controls
 - Understand process level controls
- Determine planning materiality
- Prepare and communicate client service plan

Initial Planning Process

- Assess risk account balance and potential error levels
- Plan tests of controls
 - Plan the use of work of management and others
- Plan substantive tests

Report and Assess Performance

- Perform subsequent events review
- Obtain management representations
- Engagement report
 - Conclude on management's process
- Assess engagement quality

Perform Audit Plan

- Perform tests of controls and evaluate
 - Test entity level control
 - Test process level controls
 - Evaluate control deficiencies
- Perform substantive tests and evaluate the results



Figure 1.1: Summary of the audit process

Source: Deloitte (2012)

The auditing process is therefore a rather complex and integrated cycle that demands a different set of skills from the auditor according to the different stages of the audit and aims to produce as a product at the end of the process an audit opinion that gives the user of the financial statements a reasonable assurance that the statements are free of material misstatements due to fraud or error.

1.3 AUDITING EDUCATION

The second aspect to examine when inspecting the challenges facing modern-day auditing education is the education system itself, and how this system succeeds or fails to provide students with the auditing knowledge and skills they need to become future auditors in the South African chartered accountancy profession.

1.3.1 Audit knowledge and skills

According to SAICA (2013b), as defined in the SAICA Handbook, Volume 2 on Auditing, [t]he purpose of an audit is to enhance the degree of confidence of intended users in the financial statements. This is achieved by the expression of an opinion by the auditor on whether the financial statements are prepared, in all material respects, in accordance with an applicable financial reporting framework. In the case of most general purpose frameworks, that opinion is on whether the financial statements are presented fairly, in all material respects, or give a true and fair view in accordance with the framework. An audit conducted in accordance with International Standards on Auditing and the relevant ethical requirements enables the auditor to form that opinion.

From the above it is apparent that an auditing student will be someone learning how to express an opinion about a set of financial statements. According to the *Collins English Dictionary*, (2013), another word for ‘opinion’ is ‘judgement’. It can therefore be stated that an auditing student is someone who is learning how to exercise judgement about whether a set of financial statements is fairly presented in accordance with the applicable financial reporting framework.

To accomplish this, an auditor needs three things:

- Knowledge of the applicable financial reporting framework
- Knowledge of the ISAs
- The ability to exercise professional judgement.

In a South African context, the gaining of knowledge of the applicable financial reporting framework is covered in the subject Accounting through gaining extensive knowledge of the ISAs, while the ability to exercise professional judgement as well as knowledge of the ISAs is taught in the subject Auditing. Note that the first prerequisite relates to the gaining of academic knowledge, while the second prerequisite relates to the development of professional judgement (a skill).

This skill of professional judgement is defined by ISA 200 (SAICA, 2013b, p. 6) as “[t]he application of relevant training, knowledge and experience, within the context provided by auditing, accounting and ethical standards, in making informed decisions about the courses of action that are appropriate in the circumstances of the audit engagement”.

According to the above, students need to learn to apply knowledge (*apply* being an action word referring to a practical skill). It is then evident that auditing as such is a subject in which students are taught skills and not pure academic knowledge.

In South Africa, the chartered accountancy programmes are generally structured to include four years of theoretical study and three years of practical experience. The idea is that students will be taught a solid foundation of principles during the four years' academic study, before the focus is shifted to practical skills development in the three years of traineeship. It is during these first four years of theoretical study that the subject Auditing is taught.

From the above discussion it is apparent that firstly, Auditing is a subject aimed towards developing a skill, traditionally lectured academically, and secondly, Auditing is a subject that requires integrated thinking from its students in order to apply the knowledge they have learnt.

An auditor is required to apply knowledge of accounting, taxation, legislation, ethics and financial management while adhering to the guidelines provided by the ISAs in order to conduct an audit. All of these are difficult stand-alone subjects requiring vast amounts of skills and knowledge. It is therefore obvious that attempting to integrate knowledge of these subjects into one subject, for example Auditing, will cause great difficulty for the students trying to learn this skill as well as for the lecturers having to effectively transfer this skill to their students.

1.3.2 Qualification process for chartered accountants in South Africa

In South Africa, the qualification process for chartered accountants generally covers seven years (SAICA, 2013a). The first four years are dedicated to studies at a SAICA-accredited university, during which the candidate completes a three-year undergraduate accounting degree, followed by a one-year postgraduate diploma or honours degree. The body of knowledge that is taught throughout these first four years is mainly prescribed by SAICA through the Competency Framework and Knowledge Reference lists. The next three years are then spent completing a training contract at an accredited training centre, which may include an auditing practice. While completing this training contract, two professional examinations must be passed and trainees must demonstrate abilities to comply with SAICA's Competency Framework (SAICA, 2012a). Upon completion of the

training contract and the successful passing of the professional examinations, the candidate may register with SAICA as a chartered accountant.

Most of the competencies required by chartered accountants are obtained during the training phase, while technical knowledge is mostly obtained at an academic institution. As a result, as also noted above, trainees enter the job market with technical knowledge, but without experience and the necessary skills required by employers (Coetzee & Oberholzer, 2009).

1.3.2.1 Challenges posed by the way the qualification process for chartered accountants in South Africa is currently structured

As far back as 1970, Arens, May and Dominiak argued that it is difficult to relate the important ideas (of auditing) to students because they have not clearly established in their own minds an adequate frame of reference to analyse and understand auditing concepts. They attributed this to the students' lack of exposure to accounting systems, source documents and evidence accumulation.

Rudman and Terblanche (2011) report similarly that newly employed accountants find it difficult to see the big picture of how an entire audit process works and do not fully conceptualise the audit. They elaborate that the result of this is that newly employed accountants will focus on performing individual audit procedures at the expense of understanding the context of the procedures within the audit assignment.

The following studies all support the opinion of Arens et al. (1970) that practical experience is needed in order to adequately transfer knowledge of the theoretical concepts of auditing to students:

- May (1992) found that students exposed to vacation work better understood the big picture of auditing.
- Ferguson, Richardson and Wines (2000) later proved empirically that previous work experience was a key factor that positively influenced the academic performance of auditing students.
- In a study undertaken by Sadler and Erasmus (2005), more than 50% of their respondents indicated that they had too little exposure to business and that this lack of exposure has an impact on their success or failure.

This is especially concerning, as many students lack practical experience and are not familiar with the 'real world' of business (Clikeman, 2012; Henry & Crawford, 1998; Siegel, Omer, & Agrawal, 1997). To them, transactions and activities that constitute the subject matter of auditing are foreign concepts.

There also seems to be an expectations gap between accounting lecturers and auditing firms. Dombrowski (1993) reports that auditing firms seek to recruit students who are able to apply theoretical knowledge and who have some depth of insight into theoretical concepts, while lecturers believe that students should learn this application of theory once employed in an audit practice and, therefore, focus solely on theory.

It is therefore clear that the lack of practical experience of chartered accounting students during their first four years of studies is a challenge posed by the way the qualification process for chartered accountants in South Africa is structured.

1.3.3 Auditing as a theoretical subject

From a lecturer's point of view, auditing, as a sub-set of the accounting discipline (Drake, 2011), can be presented as an organised system (Maltby, 2001) by which the auditor's tasks can be broken down into a series of steps, such as audit planning, tests of controls, substantive tests and statutory matters. In this way, the student is given a toolkit of techniques and concepts that can be applied to different situations. Auditing as a subject is therefore in essence an organised system that students should be able to apply to an array of different scenarios and should be taught as such. A possibility for challenges and difficulties to arise, for both students and lecturers, is created when the educational methodology is inconsistent with the inherent nature of the subject.

1.3.4 Inherent reasons why students struggle with Auditing as a theoretical subject

Various authors have attempted to identify and describe the difficulties students of auditing experience when faced with the theory of auditing at tertiary level. Listed below are some of these attempts:

- Students are mainly motivated to study accounting not based on some inherent love for the subject, or even proven ability, but for vocational reasons linked to future extrinsic rewards (Clikeman, 2012).

- In a study conducted by Steenkamp and Von Wielligh (2011), students indicated that they felt the chartered accountancy course had a substantial course load compared to other courses.
- Students usually have negative stereotypical perceptions of accounting, which influence the learning approaches they adopt (Mladenovic, 2000). In auditing education, this problem is escalated because of the lack of numeric involvement and students' difficulty in grasping the application of the subject area, which contributes to an already demanding learning context (Clikeman, 2012). According to Maltby (2001), incoming undergraduate accounting students have negative stereotypical perceptions about auditing, including that it is boring, disliked and difficult.
- Students tend to favour surface learning to deep learning (Clikeman, 2012). According to Booth, Bowie, Jordan and Rippin (2000), reasons for this could be an age of increasing class sizes, increased student diversity, a culture of massification and standardisation that often leads to "assessment driven calculative approaches to learning and gaining good results" (Grisoni, 2002, p. 41). Too much emphasis is placed on "the right answer" (PWC, 2003, p. 7). This will mean that instead of focusing on understanding auditing and its underlying concepts, students focus on learning and beating the system.
- Auditing is a complex task and a difficult course to teach (Jones & Abraham, 2007). One of the major difficulties in the teaching and learning of auditing lies in developing an understanding of the relatedness of the various elements of the curriculum. Other factors that influence the difficulty of the subject Auditing was noted by Blayney, Kalyuga and Sweller (2010). They commented that the difficulties encountered by novice accountants are caused only partially by the quantity of the material that must be learned. Additional important factors are the intrinsic complexity of material and the need to consciously process many interrelated elements of information simultaneously. This is because the novel material in accountancy courses often includes new concepts or formulas that are composed of a great number of elements. In order to understand these concepts and formulas, all of the relevant elements must be processed simultaneously in working memory by the student, thereby generating excessive levels of working memory load due to the narrow limits of change principle (Blayney et al., 2010).
- Accounting (and auditing) is double-faceted in that education and training has to accommodate both the academic and the professional. In addition, because it is in the public domain, it may need to serve another master, as its success is judged not

only by what it reports but also by how the public perceives it (Drake, 2011; Howieson, 2003).

- There seems to be an expectation gap. Maltby (2001) noted that students expect auditing to be an abstract process of evaluating unambiguous quantitative evidence and not the jumbled reality of collating data from various sources and dealing with conflicts between them that it is.

It is therefore evident that students struggle with auditing as a subject at tertiary level because of various common reasons related to the reason why students choose to study chartered accountancy, perceptions of the subject, the quantity of the theory of which all elements are interrelated and the inherent complexity of the subject and the teaching of it. It is also true that most of these problems stem from students' expectation gap or a communication gap between the lecturer and the student, which vastly complicates the efficient transfer of knowledge from the experienced auditing lecturer to the novice student.

1.3.5 Criticism of traditional auditing education

In 1986, the American Accounting Association first indicated in the Bedford Report that the teaching method of lecturing with routine problem solving was found inadequate, because it does not promote creative thinking and self-development. In Australia, the report by Mathews, Brown and Jackson (1990) was the result of a review of the accounting discipline in higher education, and it was concluded that the accounting discipline in tertiary education is in great need of revitalisation.

Yet, according to the American Institute of Certified Public Accountants (1998), and Albrecht and Sack (2000), current education looks more or less the same as it did 20 to 30 years ago. Albrecht and Sack (2000) further acknowledge that in an environment where most of the graduates have traditionally gained immediate, full-time employment upon graduation, it has been hard to acknowledge that there are serious problems with accounting education as a whole. According to Wessels (2004), the danger exists that accounting programmes could lose ground to other business qualifications and educational programmes if accounting education does not keep up with the dramatic changes in business practice.

Some of the criticisms of traditional accounting education have included the following:

- Too much lecturing is done (Maltby, 2001; Siegel et al., 1997). In this way, an appropriate level of competence is not always transferred to the student. Students do not get the chance to be actively involved in the learning process, but rather are passive recipients. Effective learning occurs when students are actively involved (Eggen & Kauchak, 1988). Maltby (2001) advocates that students should rather be assisted towards understanding the role and process of auditing and away from the memorising of techniques.
- Albrecht and Sack (2000) found that accounting education is in grave need of renovation to prevent newly graduated accountants from being unprepared to face the challenges posed when they enter the business world. Their argument is supported by Cheng (2007), who found that students are not adequately prepared for the ambiguous business world they will encounter upon graduation. For example, various studies address the specific skills deficiency of auditing graduates (Barac, 2009; Vasarhelyi, Teeter & Krahel, 2010). These skills deficiencies include the inability to complete a tax return, the inability to prepare working papers, the lack of insight into statutory matters and the lack of insight into changes within the information technology environment.
- Teaching methods should take into account that most students, by the time they end up in auditing class, will not have gained any experience in the auditing field (Steenkamp & Rudman, 2007; Steenkamp & Von Wielligh, 2011). Instead, there is no indication in the existing auditing curriculum of provision of opportunities for students to experience the real world of the auditing profession (Dombrowski, 1993; , even though educational psychologists of differing schools agree that experience is a vital component of successful learning (Marriott, 2004). Granted that academic studies are not intended to provide practical experience in the full scope of possible auditing areas, as this is the function of traineeship (Steenkamp & Von Wielligh, 2011), there is still the need to add some type of practical exposure to the academic programme, even if it is only simulated (Rudman & Terblanche, 2011).
- According to the Accounting Education Change Commission (AECC, 1990), the curriculum for general education should develop students that have the capacity for inquiry, abstract logical thinking and critical analysis. Yet there is evidence that tertiary education often has not managed to develop students' ability to apply their theoretical knowledge in complex, ill-defined practical situations in this way (Dombrowski, 1993). Instead, new accounting graduates possess considerable theoretical knowledge with no idea of how this knowledge should be applied in the workplace. This is substantiated by the findings of Coetzee and Oberholzer (2009),

that the performance of entry-level accountants is unsatisfactory to their employers, despite the fact that they were satisfied with their level of theoretical knowledge. The result is that students are not adequately prepared for being effective auditors in the workplace (Helliard, Monk, & Stevenson, 2009).

- There is a gap between the classroom and the real world (Stewart & Dougherty, 1993; Weil, Oyelere, Yeoh, & Firer, 2001) and between accounting practice and accounting education (Stainbank, 2003). PWC (2003) identified the need to foster students' ability to solve problems in complex business environments where the best answer is difficult to identify. This poses a challenge for academics to bridge the academic and the practical, because the quality, knowledge and understanding of auditing may rely on understanding both conceptual principles of an academic discipline and practical procedures and aspects of professional practitioners in auditing (Drake, 2011; Ravenscroft & Williams, 2004).
- Botha (2001) argues that the accounting education process is flawed because it is geared towards passing examinations, which emphasises that the primary goal is to acquire knowledge instead of embedding principles for future application. In many cases, students are only interested in acquiring knowledge that is applicable to passing examinations. The problem with this is that students spend so much time memorising all the technical theoretical knowledge that little time remains for developing the skills that employers seek from accountants (Diller-Haas, 2004). In addition, when the emphasis is placed on memorising concepts, it shifts the students' focus away from developing lifelong learning skills (SAICA, 2000) and encourages lecturers to ensure the development of lifelong students. One way to address this is through teaching methods that aim to improve these much needed lifelong learning skills and draw the focus away from rote memorisation and towards understanding the theory and subject as a whole, such as case studies and group-based, intensive and other co-operative learning formats (Booth, Luckett, & Mladenovic, 1999).
- In a study conducted by PWC (2003), it was found that additional focus needed to be placed on helping new entrants understand what it means to be a member of the profession. Again in 2011, Drake highlighted the perceived failure of university teaching to foster a critical understanding of the audit practice. Students exposed to non-traditional courses tend to have more realistic perceptions of skills and abilities that are important for success in accounting courses and success by accounting practitioners (Drake, 2011).

From the above it is clear that students as well as lecturers experience difficulty in the transferring of auditing knowledge at tertiary level.

1.4 PROBLEM STATEMENT

Based on the above it is clear that Auditing is a difficult subject for students to learn and a difficult subject for lecturers to teach. Frakes (1987) and Crawford, Helliard, Monk and Stevenson (2009) agree that teaching auditing is difficult. This stems from the inherent difficulty of the subject. There has been considerable criticism of the academic way in which the subject has been taught, which is why supplementary aids are needed (Ballantine & Larres, 2004; Stainbank, 2005; Steenkamp & Rudman, 2007). Siegel et al. (1997) recognised that the pedagogical methods required to improve the teaching of auditing deserved serious attention from the research community. Rudman and Terblanche (2011) agree that auditing lecturers have a responsibility to investigate ways to improve the teaching model in order to close the gap that exists between students with theoretical knowledge and graduates who are able to apply this knowledge immediately upon entering the workplace, and who can thereby contribute to an organisation. Various interventions are available and it was therefore deemed necessary to determine the value of such interventions in order to identify the most useful ones.

1.5 RESEARCH OBJECTIVES

The research objectives are divided into general and specific objectives.

1.5.1 General objective

The primary objective of this study was to evaluate whether the learning and lecturing difficulties experienced by auditing students and lecturers can be addressed effectively through the integration of an educational auditing information technology-based game (Audit Recall It) into the lecturing of chartered accountancy students in their third year of theoretical studies.

1.5.2 Specific objectives

The general objective was to be reached through the following specific objectives:

1. Gain an understanding of the difficulties involved in teaching auditing as a Z subject by reviewing the literature on the subject.
2. Plan the way in which the research will be conducted in order to effectively address the general objective of the study.
3. Gain an understanding of experiential teaching methodologies.
4. Gain an understanding of the benefits and challenges associated with experiential teaching methods by doing a literature review.
5. Through review of research done on the use of experiential teaching methods, identify best practice and restrictions to be taken into account when developing the prototype game.
6. Develop a prototype educational auditing computer game taking best practice from the literature study into account.
7. Test the students' perceptions of the computer game as a learning tool by developing and administering a questionnaire.

1.6 FIELD OF INVESTIGATION

The study focused on full-time third-year chartered accountant students enrolled at the School for Accounting Sciences at North West University (NWU). As this was an exploratory study to determine the perceptions regarding the use of an educational game as a teaching aid in auditing, the study focused only on the Potchefstroom campus. The reason for using only third-year students was that they have the necessary theoretical background from one year of undergraduate tertiary education in auditing, which should have equipped them with the necessary theoretical background and understanding of the subject to enable them to recognise the big picture if they are confronted with it. This will be necessary in order to integrate theoretical principles in the auditing process in order to play the educational prototype game. They are also the only undergraduate students who are expected to be able to see the big picture and answer integrated questions covering the whole auditing process, as they are final-year students.

This study and development of the game focused on the stages of developing and performing an Audit Plan, because these are the stages in the researcher's opinion that the average student has had the least exposure to and therefore finds the most difficult to

envisage. This was coupled with a focus on the inventory balance, because inventory is something tangible and something that most students have been exposed to (for example during shopping at any store) and was therefore the easiest way to get students to relate to the auditing process.

1.7 RESEARCH METHODOLOGY

This research consisted of three phases, namely a literature review, the development of the prototype game and an empirical study.

1.7.1 Phase 1: Literate review

The method entailed reviewing the literature on teaching methodologies in general, cognitive architecture and the learning process (this addressed specific objectives 1 and 2). Included in this review was a review of literature pertaining to other experiential teaching methods used and being used at other universities and in other countries (Specific objective 3). In this way, the researcher gained an understanding of the benefits and challenges highlighted by other studies conducted on the use of experiential methods in accounting and auditing education specifically. Literature pertaining to the development and use of educational games was also consulted in order to provide a framework for the development of the educational prototype auditing game (this addressed Specific objective 4).

1.7.2 Phase 2: Development of the prototype game

The storyboard of the program was written by the researcher, who has won several short-story competitions and therefore has experience in short-story writing. The technical educational content was incorporated into the storyboard by the researcher and checked and reviewed by the assistant study leader (Prof. Nel), who is a lecturer in Auditing at honours as well as undergraduate level. The educational style and value of the programme were checked and reviewed by the study leader (Prof. Fouché), who has a PhD in Accounting Education and who launched the *CommerciumTM* project successfully. The content was animated using Anime Studio 6 software by amateur animators who acquired the required knowledge in animation by reviewing the literature and completing the embedded tutorials. The programming was done in Delphi 5.5 by a person experienced in programming in the Delphi language. The whole team worked together to review the completed prototype program before the empirical study took place.

1.7.3 Phase 3: Empirical study

In order to refine the questionnaire and reduce the risk of gathering unreliable or inconsistent statistical data, the main experimental research was pre-empted by a pilot study. This pilot study (also called a pre-test) was in essence a small-scale research project that collected data from participants similar to those that were to be used in the full study. Once the data had been collected, they were analysed extensively and statistically and tested for validity and reliability. The results of this investigation were then used as a basis for improvements to the questionnaire for use during the main experiential research.

The main experiential research was conducted at NWU, with selected NWU students of the Potchefstroom campus who constitute the third-year chartered accountancy student group.

The third-year chartered accountancy class was randomly divided into two equal groups. Both groups received a theoretical lecture on auditing the inventory balance as part of their normal class routine, but only one group was required to complete the computer simulation. The other group served as a control group.

The group that was asked to complete the computer simulation did so under full supervision of the researcher in a secure computer facility at NWU. All hardware and software required were provided to the students and the researcher and supervisors, along with a small technical team, stood by in case of any errors or questions.

Both groups completed a questionnaire to measure the perceptions of students regarding the problem at hand, traditional lectures versus experiential teaching methods, their understanding of how to audit the inventory balance, possible restrictions, benefits, positive and negative feedback regarding the theoretical lecture, and so forth. The group that completed the computer simulation also completed an add-on part regarding questions relating specifically to the helpfulness of the computer program as an educational aid. The participants were asked to complete the questionnaire directly after completing the computer game or directly after the theoretical lecture in order to ensure the relevance of the answers. Their responses were recorded on a rating scale and subjected to statistical analysis. Their responses were also documented and compared to other studies done. In order to not disadvantage any of the groups, the control group was asked to complete the computer simulation the next day, but without having to complete the questionnaire.

As the study included student participants from NWU, the required procedures were followed to obtain ethics approval before the commencement of the study. Certain measures were also taken in order to ensure that no students would be disadvantaged. This entailed that, after the finalisation of the experiment, the control group had the chance to take part in playing the game and the experimental group similarly had the change to complete the questionnaire.

1.8 CHAPTER OVERVIEW

The chapters in this dissertation are presented as follows:

Chapter 1 focused on providing the background to the problem statement and defining the problem at hand. An overview of the origin of auditing and the audit process was given as background information, followed by a discussion of the knowledge and skills required of a professional auditor. Some of the historical criticisms of traditional accounting and auditing education were reviewed and studied with regard to the way in which the South African curriculum for chartered accountancy is currently structured. The problem statement was defined and the planned research methodology was set out. An overview of the chapters is also provided.

Chapter 2 commences with a brief introduction to experiential teaching and proceeds to list various methods used in this genre of teaching. The methods discussed include computerised as well as non-computerised strategies. Common challenges facing the lecturer making use of these methods are also taken into account and discussed. The chapter concludes on the historical effectiveness of experiential teaching methods in auditing (as well as accounting) education.

Chapter 3 provides an overview of various studies that have been undertaken on the use of experiential teaching methods at tertiary education level. Studies and findings as well as challenges and positive results that were revealed by the previous researchers are summarised and highlighted. The aim of the conclusion is to discover a best practice on which the development of the prototype game was to be based.

Chapter 4 tracks and documents the researcher's process of developing the educational prototype game. All theory as well as practical considerations taken into account in the development of the prototype is documented.

Chapter 5 describes the development and administration of the questionnaire to test the perceptions of the students regarding the prototype computer game as an experiential teaching method used in auditing education

Chapter 6 discusses the research design of the study, together with all ethical considerations. The validity and reliability of the study are also discussed and an overview is given of how the questionnaire was designed, developed and finalised. The second part of the chapter highlights the main findings of the questionnaire by way of statistical analysis. The statistical software program SPSS 21.0 for Windows was used to analyse the data and these statistics were interpreted to give meaningful information by the author.

A conclusion to the above findings is provided in **Chapter 7**. Limitations are identified and recommendations for future research are made.

1.9 SUMMARY

This chapter set out the planning of the study. The traditional way in which auditing education is approached as well as the way in which the chartered accountancy qualification programme is structured within the South African context was researched in order to discover the possible difficulties that make auditing a difficult subject to teach (as a lecturer) and to master (as a student). It was found that there are various factors that contribute to auditing being experienced and viewed as a 'difficult' subject. Out of these factors, the problem statement was defined.

The rest of the study was therefore planned in order to build on the discovered difficulty factors and to identify and research the effect of possible solutions that would address these factors and therefore make the process of transferring knowledge from lecturers to students more effective in this specific subject.

This chapter therefore addresses Specific objective 1: Gain an understanding of the difficulties involved in teaching auditing as a theoretical subject by reviewing the literature on the subject, and Specific objective 2: Plan the way in which the research will be conducted in order to effectively address the general objective of the study.

In essence, the research methodology includes the development of the prototype educational game, the measurement of student perceptions of this game using a questionnaire as a tool and the analysis of the gained data through the assistance of the Statistical Consultation Services of NWU.

The next chapter reports on the findings of a literature review on the experiential teaching methodologies that have been researched and, more importantly, the possibility that these research methodologies might be used to address some of the above-mentioned contributing difficulty factors when applied as teaching methods in the subject of auditing.