An examination of the factors affecting the performance of Management Accounting students at the Durban University of Technology

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DECLARATION

I, Stephanie Caroline Singh, declare that this dissertation is a representation of my own work in conception and execution. This work has not been submitted in any form for another degree at any university or institution of higher learning. All information cited from published or unpublished works has been acknowledged.

Signature Date:

1 June 2020

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APPROVED FOR FINAL SUBMISSION

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Prof L J Stainbank CA (SA) D. COM Date: 17 June 2020

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Prof P E Green (PhD) Date: 17 June 2020

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“For I know the plans I have for you declares the Lord, plans to give you hope and a future. Plans to not harm you but to prosper you.”
Jeremiah 29:11

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ABSTRACT

The success of a module at a university of technology is measured by student performance. At the Durban University of Technology in the Department of Management Accounting, students in their second year of study struggle with conceptualising content in Cost Accounting two which affects their performance. The purpose of this study was to identify the factors which may impact on the performance of Cost Accounting two students and to determine if these factors have a significant association with a student's performance in Cost Accounting two.

Many studies have identified various factors which may influence students' academic performance. For the purpose of this study, five factors that may affect student performance were identified and examined. The independent variables or factors identified were attendance, age, gender, grade 12 results and language. The dependent variable for this study was performance (in Cost Accounting two). In order to measure the performance of students included in the study, the percentage achieved in Cost Accounting two for the semester was used.

Although studies have been conducted on student performance at universities across South Africa and around the world, limited studies were conducted on the performance of Cost Accounting two students within South Africa. The study aimed to identify the factors that affect the performance of Cost and Management Accounting students at a university of technology and the impact of those factors on performance. The study found that only student attendance has a positive impact on student performance in Cost Accounting two. The findings of this study may be useful to the Department of Management Accounting at the DUT and other universities of technology. It is hoped that the current study will be useful to other teachers of cost and management accounting at universities on which factors influence the academic achievement of students.

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List of Acronyms

ABQ	Alpha Baseline Questionnaire
CMA	Cost and Management Accounting
DUT	Durban University of Technology
ECP	Extended Curriculum Programme
FA	Financial Accounting
GPA	Grade Point Average
LOITSA	Language of Instruction in Tanzania and South Africa
NF	Apollonian
NT	Promethean
OECD	Organization for Economic Co-operation and Development
SJ	Epimethean
SP	Dionysian
ToP	Theory of Performance
UNISA	University of South Africa
UoT	University of Technology

CHAPTER ONE

Introduction

1.1 Background

The success rate of a programme offered at a tertiary institution is measured using students' academic achievement (Wilder 2006). At the Durban University of Technology (DUT) in the Department of Management Accounting, a course is considered successful if the rate of throughput is above the benchmark of 80%, which is in line with the rules and regulations set by the Faculty of Accounting and Informatics at the DUT (Management Accounting Handbook 2015). Any pass rate below this mark is considered to be a cause for concern.

Many studies have examined the factors which affect student performance (Baard, Steenkamp, Frick and Kidd 2010). Factors which have been investigated include those such as socialising at university, past work experience, country of origin, part time work and student involvement at tertiary level (Baard *et al.* 2010). The aforementioned factors are more focused on student behaviour, choices and country of origin.

Other factors affecting the performance of students in tertiary institutions are the lack of attendance (Teixeira 2013), poor grade 12 results (Parker 2006) and the language barrier (Baard *et al.* 2010). Students who do not perform to the best of their ability would produce poor results (Wilder 2006).

Performance is also referred to as academic achievement. This is measured by the outcomes of an examination, test or assessment which has been completed by the student. The success rate of the test, examination or assessment determines the performance of the student who has completed it.

1.2 Problem statement

The module Cost Accounting two has previously shown pass rates below the accepted benchmark set by the Faculty. The reason for the poor performance was never examined.

Therefore, the research problem was identified as the need for reasons for the substandard performance in Cost Accounting two.

Current literature on factors affecting students' performance indicates widespread enquiries were conducted on many different factors impacting students' academic achievement. However, none of the studies identified could be linked to Cost Accounting two at a University of Technology (UoT). Hence, those outcomes cannot be generalised to these students. Furthermore, studies which were conducted in South Africa on factors affecting student performance were mostly at traditional universities rather than UoTs (Bitzer and Troskie-De Bruin 2004; Du Plessis, Muller and Prinsloo 2005; Brock-Utne 2007; Stainbank 2013; Papageorgiou and Halabi 2014; Jansen and De Villiers 2016). This study considers possible factors which may have an impact on the performance of students studying towards a diploma in Cost and Management Accounting (CMA) at the DUT.

Many studies have examined the factors which affect student performance (Baard *et al*. 2010; Bossaert, Doumen, Buyse and Verschueren 2011). However, many of the studies were conducted on Accounting and Economics modules (Dobkin, Gil and Marion 2010; Teixeira 2013; Papageorgiou and Halabi 2014; Jansen and De Villiers 2016), none of which focused on Cost Accounting two. The current study will attempt to identify and justify the factors which may have a bearing on academic achievement of these students. Baard *et al.* (2010) found that socialising at university, past work experience, country of origin, part time work as well as student involvement at tertiary level are factors which impact on student performance. These factors are more focused on student behaviour, choices and country of origin. In the current study, focus is more on prior academic attainment, external dynamics and effort made by a student.

This section discussed the factors which affect performance, the one to follow will present the aim and objectives of this study.

1.3 Aim and objectives

1.3.1 Aim

The aim of this study is to determine the factors affecting the performance of Management Accounting students at DUT. To address this aim, students studying Cost Accounting two were chosen as the object of this study.

1.3.2 Objectives

From the aim presented above, two objectives were derived for the purpose of this research, these objectives are as follows:

- To identify the factors which may impact on the performance of Cost Accounting two students; and
- To determine if these factors have a significant association with a student's performance in Cost Accounting two.

The objectives defined above directed the preparation of the following research questions:

- What are the factors which affect CMA student performance in Cost Accounting two?
- How do these factors impact the performance of CMA students in Cost Accounting two at DUT?

1.3.3 Hypotheses

For the purpose of this study five different hypotheses were generated from the literature. These hypotheses are stated below.

Hypotheses one (H^1) - Attendance

There is a positive relationship between student attendance and student performance.

Hypotheses two (H^2) - Age

There is no difference between students' performance and age.

Hypotheses three (H^3) - Gender

Female students perform better than male students.

Hypotheses four (H^4) - Grade 12 results

An above 60% pass in Mathematics, English and Accounting in grade 12 would result in a student performing better in Cost Accounting two at tertiary level.

Hypotheses five (H^5) - Language

Students who speak English as their home language will perform better than those who do not.

1.4 Research approach

This study investigates whether certain factors affect student performance and to what extent. In light of this aim, a quantitative paradigm was chosen. Adapting a quantitative approach means that the hypotheses may be tested by comparing relationships amongst the variables identified. The research instrument used for the collection of data was a questionnaire. Thereafter, the data collected were analysed via the statistical package, SPSS 23.0. The data derived were first analysed using descriptive statistics followed by a correlation strategy and regression analysis in order to find relationships which may exist between variables identified.

1.5 Significance and contribution of this study

Limited studies, such as this study, were conducted at UoT's in South Africa. The concentration of this research is on the performance of Cost Accounting two students, in the Faculty of Accounting and Informatics' Department of Management Accounting at the DUT, in Durban, South Africa. The study focuses on the academic achievement of CMA students in Cost Accounting two and factors which may influence performance. Prior research in the current focus area (Baard *et al.* 2010; Blerkom 2001; Bartlett, Peel and

Pendlebury 1993) have provided both similar and dissimilar conclusions. In addition, interpretations and results are varied and subjective.

A study such as this has not been conducted with students in Cost Accounting two in the Department of Management Accounting at a University of Technology (UoT) before. Therefore, this enquiry may add value to the body of evidence which exists. Similar studies have investigated one or multiple factors such as those to be identified in the current study. However, none of these studies have combined these five particular factors in this order. The study hopes to provide an understanding of why Cost Accounting two students either achieve below par results or thrive in the module. These findings may also assist the DUT to understand the strengths and weaknesses contributing to CMA student performance.

1.6 Outline of the study

Chapter one discusses the background and the problem statement. Thereafter, the aim, objectives and hypotheses of the study are presented, followed by the research approach used and the significance of the study, along with the contribution. Finally, this section of chapter one provides an overview of the dissertation.

Chapter two begins by providing the context of the study. The context of the study provides the background information on the DUT, Department of Management Accounting and Cost Accounting two. Thereafter, performance is defined and discussed. The theoretical framework adapted for the study is introduced. Each theory is discussed.

Chapter three provides a survey of literature identified for the purposes of the current study. Literature on how attendance, age, gender, language and grade 12 results impact on student performance is presented, discussed and summarised.

Chapter four covers the research methodology which was used for this study. The chapter shows the research design used, target population, measuring instrument and the recruitment process. Thereafter, the chapter explains the method in which the data were

prepared and analysed. The limitations, reliability, validity, confidentiality and ethical clearance are discussed towards the latter part of the chapter.

Chapter five is the presentation and interpretation of the results. The chapter begins by reintroducing the aim, objectives and the hypotheses. The demographic information provides the background data needed for the analysis of results. Thereafter, statistical testing is used to analyse the differences in responses between groups to questions and statements from the questionnaire. Finally, the chapter tests the hypotheses by means of correlations and regression analysis.

Chapter six provides the conclusions and recommendations of the study. The chapter begins by discussing the purpose of the study. Thereafter, the research objectives are discussed according to how each was addressed. A summary of the main areas of each chapter is provided. The recommendations and contributions of the study are presented. Furthermore, suggestions for further research are discussed. The chapter ends with the limitations of the study and a brief overview of the dissertation.

CHAPTER TWO

Context of study and theoretical framework

2.1 Introduction

The objective of this chapter is threefold. First, this chapter provides the background information on the institution, the Durban University of Technology (DUT), as well as the module, Cost Accounting two, which is the focus of this study. Second, as stated in chapter one, student performance is the dependent variable of the study and, therefore, a discussion on performance is also presented, which includes definitions, categories and theories for a richer explanation into academic performance. Third, relevant theories are discussed, together with the theory of performance (ToP) by Elger (2007). The following chapter, chapter three, addresses the independent variables which are identified and investigated for this study.

2.2 Context of the study

This study was conducted at the DUT in the Department of Management Accounting. The study focuses on second year students in the Faculty of Accounting and Informatics, who were enrolled for Cost Accounting two. The next section of this chapter discusses the history and background of the DUT, the Faculty of Accounting and Informatics and the Department of Management Accounting.

2.2.1 Durban University of Technology (DUT)

In 2008, the DUT turned 100 years old (100 years of wisdom 2008). This year (2019), the DUT is 111 years old. A university of technology, when compared to a traditional university, differs mainly in the area of research. A university of technology is an institution which is research informed rather than research driven. The history of the institution is informed by the history of two formerly separate institutions, MLSultan and Technikon Natal (100 years of wisdom 2008). MLSultan was established by Advocate Albert Christopher who worked with Mr. P.R. Pather during the founding days in 1928. It consisted of only Indian students with over 230 students enrolled in 1929 (100 years of

wisdom 2008). It was subsequently funded by Hajee Malukmahomed Lappa Sultan in 1941.

Technikon Natal, on the other hand, was founded in the 1900's by Doctor Samuel George Campbell (1907). This institution was predominantly a whites-only school. It had a student population of more or less 382 part time students in 1907. ML Sultan and Technikon Natal were, therefore, two completely separate institutions standing each on their own (100 years of wisdom 2008). Thereafter, ML Sultan was merged with Technikon Natal in 2002. After the merger took place, the institution was called the Durban Institute of Technology. After the Durban Institute of Technology had been in operation for a few years, a new decision was taken, leading to the renaming of the institution as the Durban University of Technology (DUT) (100 years of wisdom 2008).

This reason for this renaming was to ensure that these types of institutes all over the country were in line with the educational standards as set out by the Department of Education, thus a programme restructuring had to take place leading to the Durban Institute of Technology becoming the DUT. The next section focuses on a specific department at the DUT, the Department of Management Accounting, and explains how the department has developed as well as its vision and mission today (100 years of wisdom 2008).

2.2.2 The Department of Management Accounting

After the merger had taken place, the Faculty of Accounting and Informatics was formed. The Faculty of Accounting and Informatics is made up of six departments. Of these six departments, three are commerce departments. These departments are Taxation and Auditing, Financial Accounting and Management Accounting (commonly referred to as the Accounting cluster). The other three departments are Information Technology, Office Management Technology and Library Information Systems. The focus of this study is on one of the commerce departments, i.e., the Department of Management Accounting (100 years of wisdom 2008).

The Department of Management Accounting has its very own mission and vision. The vision of the department is “to be the premier department of choice for management accounting students by empowering future leaders in managerial finance”. The mission of the department is as follows: “the department aims to promote quality teaching, have commitment to research, encourage community involvement and engage in ongoing staff development” (Management Accounting Handbook 2015). The qualifications offered by the Department of Management Accounting are as follows: a Diploma in Cost and Management Accounting; a Bachelor of Technology Degree in Cost and Management Accounting; and, more recently, a Masters in Accounting. This study focused on students who were in their second year of their respective qualifications.

2.2.3 Entrance requirements for students in the Accounting cluster

Once students graduate successfully from their respective high schools, their next step is to either enter into the working world or enroll into a tertiary institution. When entering a tertiary institution, a student must meet the entrance criteria in order to be accepted into a programme. The programmes offered by the accounting cluster are as follows:

- Cost and Management Accounting (CMA);
- Financial Accounting (FA);
- Taxation;
- Auditing; and in
- Pietermaritzburg (CMA, FA, Taxation).

The entrance requirements which need to be met for enrolment of a diploma in the Accounting cluster at the DUT are as follows:

- A pass in English with fifty percent and above;
- A pass in Mathematics with forty percent and above; or
- A pass in Accounting with fifty percent and above.

Some departments use a point system for admission into a programme in addition to the rating system stated above. Those students who achieve results which are on the lower end of the rating system can be placed into the extended curriculum programme (ECP). However, these students are eventually exposed to the same modules as students who

are accepted on the normal programme (mainstream). ECP students are given more time and less modules to complete each year in order to assist them with coping as they are presumed to be weaker academically. In terms of the diplomas/programmes offered in the Accounting cluster, the acceptance criteria do not have a high variance as first and second year students are exposed to the same course work but at different points over a two year period. Specialisation is possible if a student would like to move between diplomas in their third year of study.

2.2.4 Cost Accounting two

Cost Accounting two is a subject which is taken by Accounting students during the first and second semesters of their second year of study at the DUT. A prerequisite for Cost Accounting two (module one and two) would be a minimum pass of fifty percent in Cost Accounting one (which is completed by students during their first year). This subject imparts knowledge on students about accounting systems, how to operate a basic job costing system, how to go about administering contract accounts and how to prepare budgets, both fixed and flexible.

Students are assessed in this subject by writing two control tests, which are one and a half hours long, and a main examination, which is three hours long. In order for a student to qualify to write the main examination, the student first needs to obtain a minimum average of 40% from test one and test two or in the aegrotat test. The aegrotat test is a special test which is awarded to students if they have failed to write either test one or test two. If a student fails to obtain a minimum duly performance of 40% from the tests written, the student then has to repeat the entire module without writing the main examination.

Cost Accounting two module one is a prerequisite for Cost Accounting two module two. The student is not be allowed to register for Cost Accounting two module two until he/she passes Cost Accounting two module one (Management Accounting Handbook 2015). This could cause a delay in the graduating process of up to a year as Cost Accounting two module two is only offered in the second semester of the following academic year.

Subsequently, Management Accounting three cannot be taken by a student who has failed to complete Cost Accounting two, and Management Accounting four cannot be taken by a student who fails to complete Management Accounting three. From the statements above, it is clear that failing to complete one module would result in a chain of events and consequences, which would ultimately cause loss of time and delay the process of completion.

As the objective of this study is to examine the factors which affect the performance of students in Cost Accounting two, the next section discusses the meaning of performance and the various theories related to performance.

2.3 Performance

2.3.1 An analysis of performance

According to Campbell and Wiernik (2015), performance has been described as an individual attempt to meet the given standard in any organization. It is usually linked to the effort which goes into a specific task or organisation, or, in this specific case, the effort which a student puts into his/her work. Performance can be simply described or clarified as tasks which are accomplished by people; these tasks are then measured according to customised standards which are set out by the assessor (Campbell and Wiernik 2015). In addition, three varying aspects of performance are described as follows:

- The attitude/character applied;
- The standard which needs to be met; and
- The instructions, principles and settings under which these particular standards would be imposed.

Motowildo, Borman *et al.* (1997) notes that performance is similar but different to the behaviour of an individual. Performance is the result of an assigned task carried out with an evaluative component. Behaviour is simply what an individual is expected to do. The differentiating characteristic between behaviour and performance is the evaluative component introduced at the very beginning of an assessment. When evaluating

behaviour (performance), one would have either a positive outcome, which would mean good performance, or a negative outcome, which would result in poor performance.

2.3.2 Measurement of performance

The measurement of performance can be quite complex but is directly linked to the actions taken by an individual (Campbell and Wiernik 2015).The result expected or assessed is directly linked to the design of work set. In addition, according to the study guide for the module, the purpose of Cost Accounting two is to fully understand the principles and application of Cost Accounting practices and concepts (process costing, standard costing, pricing decisions, marginal and absorption costing, decision making). The performance of students is measured on their ability to apply the knowledge gained in a test and examination.

2.3.3 What is performance?

In any educational institution, there are specific tasks and goals, which are set for individuals to complete within a given period. The ability to complete these goals and how well this is done is referred to as academic achievement or performance. Academic achievement usually requires abilities such as critical thinking in order to achieve the best level of academic achievement (Steinmayr, Meibner *et al.* 2015).

The measurement of academic achievement varies and would be specific to the outcome of the assessment. At the DUT, the Department of Management Accounting uses curricular activities in order to measure academic achievement; this is done via teaching course work and then allowing students to undergo tests and examinations in order to measure or evaluate whether or not the outcomes have been achieved for each module. Over and above the curricular indicators of achievement, the bigger goal for a student in the Department of Management Accounting would be the cumulative indicator; this would result in a student obtaining a diploma and then a degree in their respective area of specialty for which they have undergone academic testing. Cumulative indicators of academic achievement usually take a longer period to achieve than curricular indicators; a student would need to undergo many curricular activities and pass each in order to

obtain a degree or diploma. Failure to pass all curricular indicators would result in poor academic achievement by the student (Steinmayr, Meibner *et al.* 2015).

2.4 Theoretical framework

To provide a theoretical underpinning for this study, the following section first reviews Elger's (2007) theory of performance (ToP) before reviewing other relevant educational theories, such as Astin's (1984) theory of student engagement, Tinto's (1975; 1993) integration theory and Bean's (1985; 1995) psychological theory, and their applicability to the current study.

2.4.1 Elger's (2007) theory of performance

The first theoretical underpinning of this study is the ToP formulated by Don Elger from the University of Idaho in the United States of America. Elger (2007) states that the level of performance by an individual helps one to understand how close the individual is to achieving the specified outcome. Outcomes are generally established and accessible at the beginning of a task, or, as in this study, a module in a course at a university. According to Elger (2007), performance is made up of a number of components working together to produce a desired result. The rationale developed for the ToP by Elger (2007) is as follows:

"*Humans are capable of extraordinary accomplishments. Gandhi led a nonviolent revolution that liberated India from colonial rule. Wonderful accomplishments also occur in day-to-day practice in higher education. An advisor inspires students to follow their dreams. A teacher magically connects with students. A researcher continually asks the quintessential questions that lead to revolutions in thinking. A dean inspires an entire college to collaborate and attain wonderful outcomes. Since worthy accomplishments are produced from high-level performances, a theory of performance (ToP) is useful in many learning contexts*".

2.4.1.1 Theory of performance (ToP)

The ToP consists of six components, which assist in the understanding and explanation of performance. These components could also assist lecturers with determinants on how performance can be more improved.

The six components which relate to the performance of an individual, according to Elger (2007), are:

- context;
- level of knowledge;
- level of skill;
- level of identity;
- personal factors; and
- fixed factors.

Elger (2007) anticipated that there are three bases on which performance could be further developed. These bases involve an individual's state of mind, productivity in an enriching environment and one's participation in self-evaluation. These bases are discussed further under the section linked to attributes of student performance.

Great accomplishments arise from extraordinary performers, which make the ToP vital in academic surroundings. The ToP can be used in the following scenarios:

- traditionally; in schools and developmental workshops;
- non-traditionally; through research, committee meetings and higher education; and
- organisationally; by evaluating the performance of an organisation as a whole.

Elger (2007) identified performance as a combination of valuable skills and attained knowledge. These are put together to produce a notable outcome when structurally completed. With this in mind, the quality of performance, which an individual achieves, helps to indicate specifically where the person is on his/her journey to completion. The rate at which the result is attained and the strength of the result attained allows the evaluator (teacher/lecturer) to determine whether good, average or poor performance has been achieved.

To measure performance, an understanding of teaching and learning methods needs to exist. The methods used during teaching and learning are a valuable indicator of academic performance. One of the primary theories on educational strategies is "Bloom's Taxonomy of Learning Domains". When looking at the techniques used, three distinct domains surface. As stated in Wilson (2019), the domains are cognitive, affective and psychomotor. The cognitive domain was developed by Benjamin Bloom in 1956, this domain has to do with “Thinking” (Bloom and Krathwohl 1956). The affective domain was developed by both Benjamin Bloom and David Krathwohl in 1964, this area links to “Emotions or feeling” (Krathwohl, Bloom and Masia 1964). Lastly, the psychomotor domain was developed by Anita Harrow in 1970, this domain is “Kinesthetic or physical” (Harrow 1972; Simpson 1972; Dave 1970). It is believed that a combination of all three domains, listed above, will provide a more holistic teaching and learning experience (Anderson and Krathwohl 2000; 2001). In light of this belief, it is assumed that improved teaching and learning would result in improved performance. The taxonomies highlighted are knowledge, comprehension, application, analysis, synthesis and evaluation. It would appear that performance is measurable from the application phase until evaluation.

Table 2.1 provides different areas of specialisation as well as the primary domain for each area, as well as examples. This information supports a richer understanding of the classification and vastness of performance.

Table 2.1: Domains and areas of teaching and learning		
Area of performance	**Primary domain**	**Examples**
Design	Cognitive	- An architect drawing a new plan for a building, - A choreographer putting together a performance, - A baker making a specialised birthday cake.
Problem solving	Cognitive	- Finding solutions to issues, - Working out a complex case study given to you by your lecturer, - Working out a new curriculum which diversifies the teaching and learning process.
Life Management	Affective	- Providing support to colleagues or friends who are distressed. - Encouraging people around you to always do their best. - Having morals and ethics and abiding by them.
Playing sport and instruments	Psychomotor	Being able to play musical instruments.
Source: Elger (2007)		

The next sections explain how academic performance and factors (ToP) are linked.

The current study has a dependent variable (performance) which relates to the ToP by Elger (2007), discussed partially in the sections above. This theory looks at teaching and learning strategies which have a variety of factors believed to have an impact on a person's performance. One of the domains, being cognitive, is linked to the teaching and learning methods used in Cost Accounting two. In this module, students are required to possess cognitive abilities in order to be successful and progress to the next level. Considering that this study aims to find reasons for poor academic performance, if any, ToP provides an understanding of how certain components influence students' academic performance. In addition, the study provides a basis on which performance could be improved. This is be linked to the findings in successive chapters.

2.4.1.2 Attributes of performance ToP

Elger (2007) explains that there are many attributes that contribute to performance; just as a computer needs various parts in order to function, so does performance. Figure 2.1 illustrates the various attributes which contribute to performance and the various levels they each contribute.

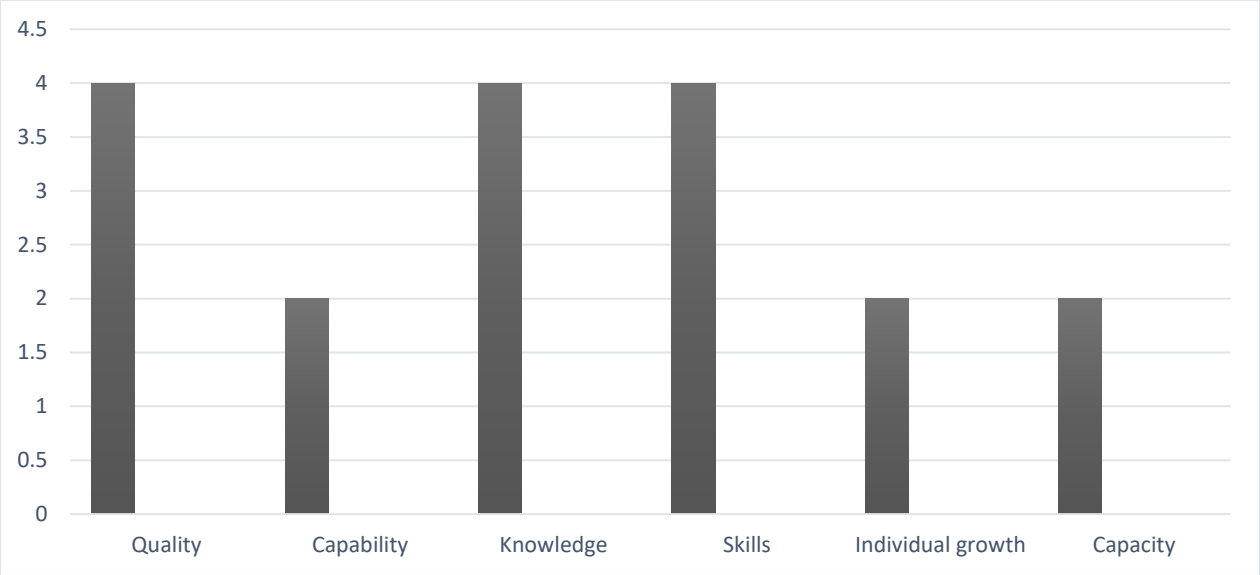

Figure 2.1: Attributes contributing to performance
Source: Elger (2007)

Elger (2007), consequently, outlines the various levels of performance and how each attribute, which an individual achieves, builds on a certain level of performance. This means that, as each attribute is achieved by an individual, the level of performance thereafter increases. Elger (2007) also theorised that performance can be increased by using a particular technique. As mentioned earlier, this method involved three categories which are said to have a direct impact on the performance of an individual. These categories are as follows: an individual's mind-set, the environment and reflective practice. These are explained in the next section and elaborated on after Table 2.2.

a) Mind-set

Firstly, an individual's mind-set is the attitude which an individual possesses towards his/her goals and achievements; an individual could either have an optimistic mind-set

towards his/her goals and achievements which would aid in a positive outcome, or an individual could have a negative mindset towards his/her goals and achievements which would make achieving the outcome quite difficult (Elger 2007).

b) Environment

Second, the environment, with which an individual surrounds him/herself, impacts on performance. The type of friends or social groups which a student may interact with may have a direct impression on his/her approach towards his/her own work. A student's physical health as well as emotional status is also vital in performance. If a student is physically or emotionally unwell, this may also impact negatively on the student's outcome (Elger 2007).

c) Reflective practice

Third, reflective practice is crucial for an individual. It is when a student or an individual, in retrospect, assesses the current state of affairs. For example, if poor results have been obtained by a student, the student needs to be able to identify his/her strengths and weaknesses. The student needs to evaluate himself/herself and generate a plan of action or a way forward to ensure success when faced with the task again (Elger 2007).

By understanding the attributes of performance, lecturers/educators are able to focus students towards improving their academic results. This would sequentially lead to stronger results and a greater throughput rate (Elger 2007).

Table 2.2 provides each attribute which influences the ToP as well as a description, exemplar and a classification rule for each.

Table 2.2: Attributes which influence performance

Attribute	Description	Paradigms	Classification rule
Level of identity	As individuals mature in a discipline, they take on the shared identity of the professional community while elevating their own uniqueness. As an organisation matures, it develops it mission, its way doing business, and its uniqueness.	A student uses disciplinary slang to describe engineering design activities. A teacher examines his/her performance through the lens of student learning. A college dean holds herself/himself accountable for her/his leadership. A research team evolves its identity as a performance organisation.	Associated with maturation in a discipline or culture. Associated with maturation in life Internalised by person or organisation. The individual or organisation takes on the shared identity.
Level of skills	Skills describe specific actions that are used by individuals, groups, or organisations in multiple types of performances.	Making assumptions, Persisting, Being humble, Setting goals, Observing.	Describe an action Action is relevant in a broad range of performance contexts.
Level of knowledge	Knowledge involves facts, information, concepts, theories, or principles acquired by a person or group through experience or education.	Facts/information names of states, conversion factor between meters and centimeters, Concepts democracy, chair, force, Principles/theories relationships between the tilt of the earth and the seasons; law of conservation of energy.	Derives from human experiences. Can be communicated or recognized.
Context of performance	This component includes variables associated with the situation in which individual or organisation performs.	The performance of an academic department is coupled with the organisational effectiveness of the host college. Learning of a student is coupled with the organisation of a class.	Relates to circumstances associated with the performance. Applies to multiple performance within the context, not a personal factor.
Personal factors	This component includes variables associated with the personal situation of an individual.	Performance of a teacher is impacted when he or she is ill. Performance of a dean is impacted when his or her spouse dies. A student's performance is impacted by the quality of his or her home environment.	Involves life situation of an individual.
Fixed factors	This component includes variables unique to an individual that cannot be altered.	Performance in basketball is impacted by height. Genetic factors influence performance.	Involves an individual. Immutable; cannot be altered.

Source: Elger (2007)

The next section of this chapter presents the attributes which add to the ToP.

2.4.1.3 Linking techniques and attributes of performance to the current study

Elger (2007) discussed his ToP using three techniques. The first was “Mind-set”. This technique suggests a student’s performance is linked to the attitude which a student has towards a particular subject/activity. The technique highlights factors which may impact on student performance. If a student has a bad attitude towards his/her education, the student will choose not to attend lectures regularly. This could have an effect on academic performance. The attributes which link into this technique are the context of performance as well as personal factors. Even though some students may have a positive attitude towards their education, external factors may impact on the ability of a student to attend regularly. This is likely to have an impact on performance; missing lectures typically results in not having access to a proper understanding of material covered.

The second technique is “Environment”; individual performance is generally influenced by one’s surroundings. This would mean the environment which surrounds an individual’s life could impact on one’s ability to perform. However, these situations could have either a positive or negative influence. Also, the mental and physical wellbeing of a student is highlighted as being an aspect which contributes to performance. Due to older students being mature individuals, they may take their education more seriously than the younger generation. The attribute which links to this technique would be the level of identity as this attribute encompasses advancement in an area as well as in life.

The final technique identified by Elger (2007) was “Reflective practice”. This technique suggests experience, past knowledge or skill (or lack off thereof) to be an indicator of performance. For example, if a student had performed poorly when in grade 12, the student can make a conscious decision to improve his/her results when at university. Similarly, if a student had achieved outstanding results, the student will then adapt his/her learning styles to cope with tertiary course work. This technique links to two of the attributes listed in Table 2.2, i.e., levels of skill and knowledge. Skills and knowledge are usually acquired from prior schooling or education.

Looking at the remaining attributes, fixed factors are those which cannot be changed or are beyond an individual's control. Factors such as gender and the language barrier are beyond a student's control but are believed to weigh on academic achievement.

The above section discussed Elger's (2007) ToP and how it links into certain factors, which may affect student performance. The next section analyses Astin's theory of student engagement and Tinto's integration theory.

2.4.2 Identified educational theories

The study examines various factors which have an effect on performance. In light of these factors, many theories were identified to be relevant to this study. Educational theories identified for the purpose of this study are discussed below.

a) Astin's theory of student engagement

Astin's (1984) theory of student engagement or involvement was first introduced to education literature in 1984. Astin (1984:297) defined student involvement as "the amount of physical and psychological energy that the student devotes to the academic experience". This would mean that students more engaged in Cost Accounting two should perform better than students less engaged in the Cost Accounting two. His theory of student involvement was based on five tenets:

1) "Involvement refers to the investment of physical and psychological energy";
2) "Involvement occurs along a continuum";
3) "Involvement has both quantitative and qualitative features";
4) "The amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program"; and
5) "The effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement".

The tenets are related to Cost Accounting two course as follows:

The first of the five tenets, the involvement of physical and psychological energy, requires students to be present physically and mentally, in order to gain the benefits available during contact time. In addition, tenet two suggests the involvement to be continuous. This would mean attendance should be consistent if a student would like to achieve his/her full potential academically. The third tenet highlights quantitative versus qualitative involvement. This tenet indicates that the quantity of being physically and psychologically present at lectures also has a qualitative component. For example, a student may have high attendance and continue to produce poor results as the quality of the engagement is not sufficient to produce good results. This may well be recognised as the cognitive abilities possessed by a student, as discussed under Elger's (2007) ToP. Elger (2007) found a similar alignment in student performance when assessing quantity and quality.

This research thus adds to the empirical testing suggested by Astin (1984) as positive responses by the students on their perspectives of this Cost Accounting two module would indicate that learning has taken place (tenet four) and that the strategy has been effective (tenet five).

The concepts of time dedicated and determination (tenet three of Astin (1984)) appear frequently as significant determinants of an extensive assortment of cognitive learning results in other studies (Bloom 1974; Gagne 1977; Fisher, Berliner, Filby, Martiave, Cahen and Dishaw 1980).To underpin the impact of intellectual abilities, most of the evidence supports the notion of involvement as a critical component in the learning process.

Astin's theory of engagement has also been referred to as the subject matter theory and the resource theory.

- The subject matter theory (Astin 1984) focuses on attendance of a student at lectures. This theory states that attendance assists students in the process of learning. The contact time a student has access to, if fully utilised, has a positive impact on the teaching and learning process which, in turn, influences performance.

- The resource theory (Astin 1984) states that, if adequate resources are brought together in one place, student learning will occur. This would link to attendance as a student would need to be present in a classroom to fully access all available resources.

Astin's (1984) theory of student involvement is relevant to this study as one of the factors of performance is student attendance. This study aims to find the impact that attendance may have on performance of students in Cost Accounting two.

Two theories attributed to Tinto (1975; 1993) are discussed next.

b) Tinto's integration theory

Student retention rates are a significant indicator of student performance at tertiary institutions. The ability to maintain low dropout/failure rates is a measure of student performance for a faculty/department/subject team. Tinto (1975) proposed that the extent to which a student is assimilated into the academic and social life cycle of the university, the level of commitment to his/her studies and the goals of the university are predictive of student diligence. This was also supported by McCubbin (2003).

Tinto (1993) recognises three main sources of student departure: academic difficulties; the failure of individuals to resolve their educational and occupational objectives; and their failure to become or remain integrated in the academic and social life of the institute. Tinto's 'Model of Institutional Departure' states that, to persevere, students need integration into formal and informal academic systems, as well as prescribed and unofficial social systems.

- Tinto's integration theory, used by Berge and Haung (2004), McCubbin (2003) and Seidman (1996), recognised pre-entry college attributes, such as background, academic ability, race, gender and prior schooling, as contributing factors to a student's academic performance (Tinto 1975). Cost Accounting two learners do come from various backgrounds which are reflected in their prior secondary schooling. Students enter the DUT with varying grade 12 results, some students lack the prior knowledge needed to easily understand Cost Accounting two terms

and concepts. However, race and gender are fixed factors which cannot be controlled. Gender, however, has been identified for the purpose of this study as one of the factors impacting on performance in Cost Accounting two (discussed in Chapter 3).

- Tinto's (1993) model of student departure specifies some attributes which assist in the prediction of student success. One of the contributing factors towards student attainment at an institution is prior schooling. Factors, such as academic achievement at high school, or first year at university, as well as social experiences, would affect a student's ability to flourish or be fruitless in his/her endeavours. Tinto's (1975) model of student departure is shown in Figure 2.2.

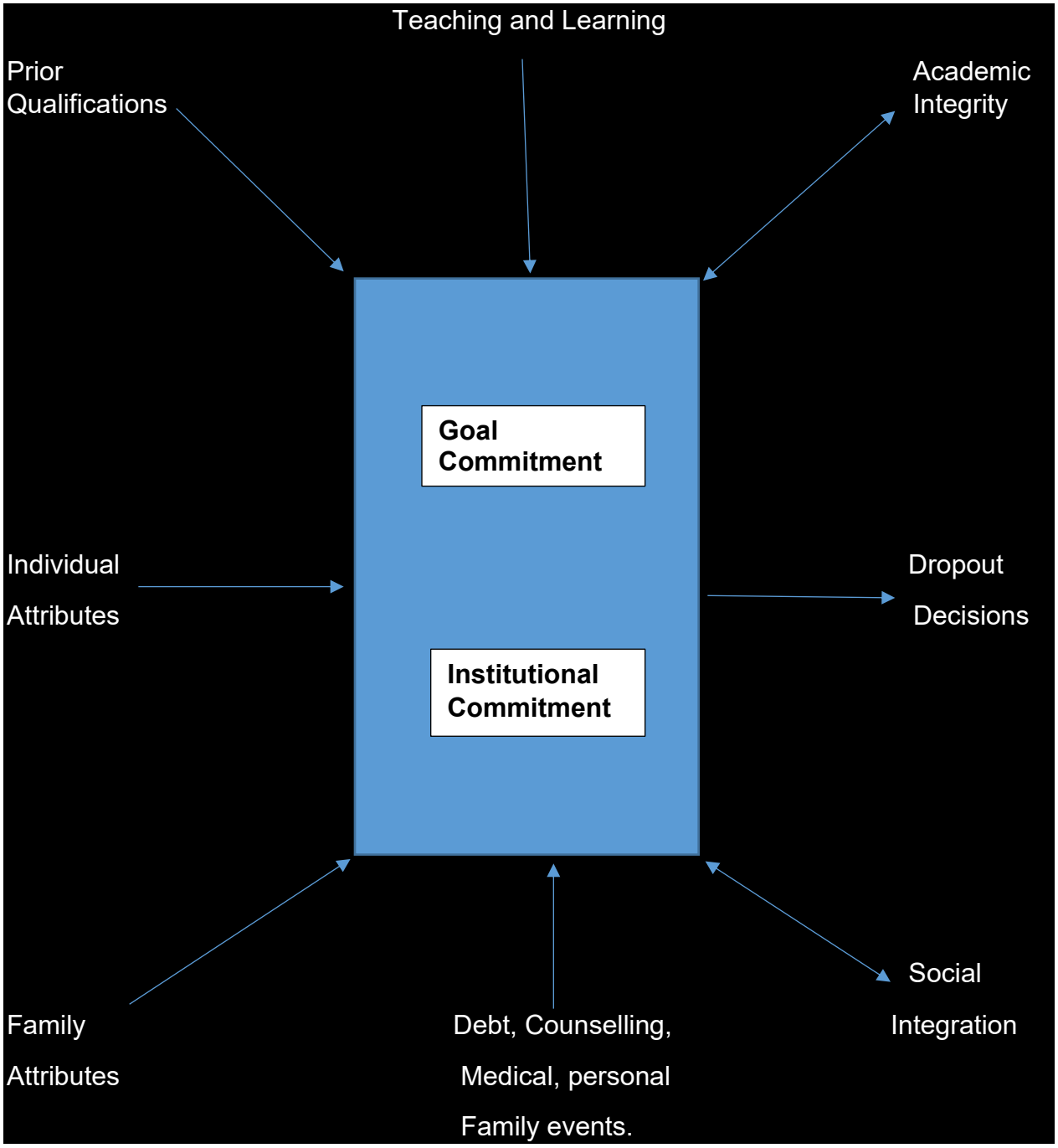

Figure 2.2: Tinto's model of student departure
Source: Tinto (1975)

c) Bean's psychological theory

Bean's psychological theory (Bean and Metzner 1985) states that older students have responsibilities which, in turn, would restrict them from adjusting to a younger tertiary environment. This could have an emotional impact on their ability to cope as well as the manner in which teaching and learning takes place for a mature-aged student (Eaton and Bean 1995). In the current study, because most of the students are aged between 17 and their early 30's, the percentage of mature students is substantially less than that of young students. This is because the institution is primarily a full time university which offers only certain courses part time. In light of the above, younger students dominate the environment in which older students exist. The question of age being an influencer of student performance is predominantly derived from prior research and theories provided to date. This study examines the influence of age on Cost Accounting two students in order to determine its significance. This is discussed further in chapter three.

2.4.3 Summary of the theoretical underpinnings

Four relevant theories have been presented and discussed in section 2.4 of this chapter. These theories were Elger's (2007) ToP, Astin's (1984) theory of student engagement, Tinto's (1975; 1993) integration theory and, lastly, Beans' (1985; 1995) psychological theory. Each theory linked the manner in which the attributes to performance influences the outcomes achieved. The ToP, by Elger (2007), stated that performance is made up of pieces which effectively collaborate to produce an anticipated outcome. The theory explains that performance is made up of three distinct techniques which retain several attributes. This tied in with Astin's (1984) theory of student engagement in the sense that both studies emphasised the importance of cognitive skills, as well as frequency and quality of use of resources available. The third theoretical underpinning examined was Tinto's (1975; 1993) theory which explains prior schooling as an influencer of student performance. This theory links to the current study as grade 12 results are assumed to be predictors of academic success in university. The theory also described fixed factors, such as age, intelligence and gender, as assumed factors which impact on student performance. Lastly, Bean's (1985; 1995) psychological theory theorised that older students find it harder to cope than their younger classmates. This difficulty was attributed

to external circumstances, which are linked to age. Although there are many other theories, this study focuses only on academic performance in the Accounting discipline and has discussed five of the important relevant theories.

2.5 Overview

This chapter first addressed the context of the study, which included a brief history of DUT, along with information on the establishment of the Department of Management Accounting. Furthermore, the entrance criteria for acceptance into the programme was provided. In addition, the module under investigation for this study, Cost Accounting two, was elaborated upon in order to provide a richer understanding of the study going forward.

The dependent variable, performance, was discussed further. The chapter introduced performance by providing an analysis, a measurement and a definition. Moreover, the theoretical framework (ToP) by Elger (2007) provided structure in terms of academic performance and the measurement thereof. In addition to Elger's ToP, Tinto's integration theory, Astin's theory of student engagement and Bean's psychological theory were presented and discussed as part of the theoretical underpinning for the current study.

The next chapter discusses each of the independent variables (factors) and the literature surrounding these factors.

CHAPTER THREE

Literature review and development of the hypotheses

3.1 Introduction

This study investigates the factors affecting the academic performance of Cost Accounting two students. Prior research similar to this study (Baard *et al.* 2010*;* Blerkom 2001; Bartlett *et al.* 1993) did not all conclude with the same findings, and had opposing views and contradicting results. Furthermore, limited studies have been conducted at universities of technology in South Africa. The objective of this chapter is to develop the hypotheses which are to be tested in this study. The new information that the study provides is an understanding of why Cost Accounting two students either perform poorly or well and the factors which contribute to their failure or success based on the data collected.

3.2 Reiterating performance

As detailed in chapter two, Campbell and Wiernik (2015: 48-57) describe performance as the method which one follows under prescribed conditions in order to achieve a specific goal/accomplishment. These achievments are then measured by assesment criteria to determine succesful/unsuccesful academic performance (Motowildo *et al.* (1997). In order for a learner to complete his/her course and become a graduate, the student needs to perform according to the standards set out by the examinating body. This measurement of performance determines success or failure when using examinations as a means of assesment. The following sections focus on factors which may impact on student performance.

3.3 Factors affecting performance

This section presents various studies specific to each of the factors believed to impact on students' academic performance. According to Hoskins, Newstead and Denise (1997), age, past qualifications and gender have a significant impact on the constructive or destructive performance of students at university level. A study by Jansen and De Villiers (2016) conducted in a South African university in the Western Cape found the following

factors to have an impact on third year Accounting students; final year high school grades, high school Mathematics grade, type of school attended, results in Accounting one and two, high school Accounting, age, gender, language, bursary holder, number of attempts, living in a residence or at home and four year versus three year degree programme.

This study examines similar factors using second year CMA students, taking a second year module called Cost Accounting two, at the DUT. These factors were carefully chosen in light of the speculated hypotheses of being significantly influential towards performance. Attendance, age, gender, language and grade 12 results are discussed individually as contributing factors concerning student performance. Although the Jansen and De Villiers (2016) study covered most factors, it did not examine the impact of attendance on the performance of accounting students. Each of the factors is discussed in the following sections.

3.3.1 Class attendance

Several studies have examined the impact of attendance on performance.

3.3.1.1 The Durden and Ellis (1995) study

Durden and Ellis (1995) conducted a study at a state university using a group of students in an undergraduate economics module over three semesters. The study found attendance matters when it comes to academic achievement in a course. Higher achieving students tend to prioritise attendance as compared to average/lower achieving students. A student could stay away from three to four lectures per semester without it having a negative impact on his/her performance. However, continuous absenteeism impacted negatively on the academic achievement of a student. The next study corroborates the findings of Durden and Ellis (1995).

3.3.1.2 The Blerkom (2001) study

In keeping with the Durden and Ellis (1995) study, Blerkom (2001: 487-494) found class attendance is directly related to the performance of students. The study was conducted using 959 undergraduate psychology students, at the Pennsylvania State University. A

sign in system had been implemented to track student attendance of the sample population. Attendance for the period had been recorded at 87.8%. Students had varying reasons for poor attendance, one of which being other course work which they needed to complete as the academic year end approached. In addition, Blerkom (2001) also points out a significant decrease in attendance from the beginning of the year to the end of the year. Furthermore, students attended more regularly when being rewarded with marks or by being tested on a weekly basis. When faced with no extra marks or weekly testing, students became reluctant to attend class. The study concludes that attendance has a direct relationship with academic performance. However, Johnson, Joyce and Sen (2002), discussed next, provide contradictory findings.

3.3.1.3 The Johnson, Joyce and Sen (2002) study

Johnson *et al.* (2002: 67-72) conducted a study using 17 groups of students taking a course on the principles of finance at Michigan Technological University. The authors believed that attendance does not affect academic performance but only measures the effort of a student. In addition, it does not automatically mean a student will produce enhanced results if his/her attendance is consistent throughout the semester. In this particular study, attendance had no significant impact on the student results. Young (2004), discussed next, found similar results.

3.3.1.4 The Young (2004) study

Young (2004) conducted research at 300 colleges in America on the attendance of students at lectures. The study looked at how educators and facilitators used technology in the classroom. One of the findings of this study was that the use of electronic power point slides as a tool for lecturing had a negative impact on the attendance of students. No mention was made of technology having a negative bearing on student performance. Students who participated in this study thought lecturers waste time setting up equipment and attending to technical glitches. In addition, students could easily access the very same slides from the online classrooms. In light of this, attendance dropped by 20%. This could mean that students found attendance at lectures optional. However, students

continued to access lecture material for self-study. Therefore, attendance had no impact on student performance.

3.3.1.6 The Marburger (2006) study

Marburger (2006) tested whether absenteeism was a factor leading to poor performance. This study investigated undergraduate university students studying the principles of macroeconomics in 2002. Students were divided into two groups; those for whom attendance was made compulsory (Policy) and those for whom attendance was a choice (No Policy). Students who had no obligation to attend lectures had a significant decrease in performance due to their poor attendance. When compared to students who were obliged to attend, the group with an attendance policy was stronger when assessed as a whole. As tests and examinations drew nearer, Marburger (2006) noted a decrease in attendance from those who had no obligations to be in class. However, students who had to attend lectures due to the enforcement of a strict attendance policy, showed little variation in attendance when tests and exams drew closer. The conclusion drawn from this study was that lectures, being compulsory, would improve attendance and improve student performance. Thus, absenteeism had a direct inverse relationship with student performance.

3.3.1.7 The Traphagan, Kucsera and Kishi (2009) study

Traphagan *et al.* (2009) conducted a study in 2005 which examined class attendance and the availability of online resources, such as online videos of lectures, power point slides and online learning materials, using approximately 350 students from a geology course at the South Western University (United States of America), The availability of online resources caused class attendance to deteriorate. This study found students who attend lectures and make use of online resources had a higher grade point average (GPA) than those students who relied solely on online resources. They had also found that blackboard availability affected the attendance of a class significantly. Since students had access to blackboard, they did not feel the need to attend lectures as regularly. A positive attendance produced a higher GPA and a negative attendance produced a lower GPA. Thus, class attendance positively influenced student performance.

During test and examination periods, a general decrease in student attendance was noted. When questioned about the decrease in attendance, students responded by stating the following: They would rather stay home to study instead of attending the last few lectures for the subject or module. Traphagan *et al.* (2009) proved that absenteeism has a negative impact on student performance and that blackboard has a negative effect on attendance which directly links back to student performance.

3.3.1.8 The Dobkin, Gil and Marion (2010) study

Dobkin *et al.* (2010) conducted a study in 2006 which used three classes of economics students at UC Santa Cruz Campus. The researchers found that students' mandatory attendance at lectures, which was based on students achieving less than the grade point average, significantly improved the performance of these students as compared to students who had scored slightly higher than the grade point average in the same module.

Dobkin *et al.* (2010) noted the Chen and Lin (2006) study which found that students who had not been exposed to material, which had been tested in an exam, would perform poorly when tested on the missing class work, as compared to being exposed to the class work. The reason behind this finding is that, although the text books and study packs contain sufficient information for the student to perform well in a course, if the student is not exposed to the information by a lecturer, it will impact negatively on his/her performance. The finding is similar to studies in which non-attendance would impact on a student's performance due to the student missing important information which is communicated to him/her during class.

3.3.1.9 The Cortright, Lujan, Cox and DiCarlo (2011) study

Cortright *et al.* (2011) conducted a study at the Wayne State University of Medicine in Detroit, Michigan. A class of 51 undergraduate physiology students were selected from the Department of Physiology. The study examined distance learning and the impact on performance. With regards to female students, there was a variation of approximately 20% with regards to attendance and examination results. Male students, however, showed a minimal deviation with regards to attendance and examination results. The

reason for the differences, as stated by the authors, was that if a student is motivated, the student will ensure either his/her attendance at class or his/her ability to utilise resources online, such as blackboard, text books and the internet. This is done to ensure his/her understanding and success in a particular course or module. The study also pointed out that distance learning provides minimal class interaction for students. However, bearing in mind that there is little interaction, students utilise videos, audios and study guides to ensure their success in a given course or module.

Distance learning encourages responsibility and the desire to study on one's own due to limited lectures or lessons. Cortright *et al.* (2011: 416-420) also pointed out that, when attendance is made compulsory, it affects a student's ability to be motivated to attend lectures. This could then have a negative impact on attendance as a whole. Finally, if students are actively engaged in lectures, it would ensure their minds remain continuously challenged. It is the minority of students who would choose to sit passively just to listen to a lecturer. The study concludes that there are minor differences between the types of students and pass rates, but that attendance has a direct impact on student performance. The findings from this study were, therefore, that there is little difference between attendance at lectures and students' examination results.

3.3.1.10 The Schmulian and Coetzee (2011) study

Schmulian and Coetzee (2011) examined absenteeism and the reasons why students did not attend lectures as a whole at the University of Pretoria (South Africa) in 2011. The sample population was made up of two groups which comprised of 200 students each. Schumulain and Coetzee (2011) argued that students who miss class would be deprived of vital experiences needed in the process of learning. These include being deprived of learning from other students when important questions are raised and discussed in class. Absenteeism would also result in a student not being able to fully understand course work. This lack of understanding was due to the lack of notes which would be collected during lecture time. Students also produce valid and less than valid reasons for missing class. The acceptable reasons would be illness, part-time work or a traumatic event. A reason that would be unacceptable would be loitering, being too lazy or irresponsibility. A positive

correlation was found between class attendance and the academic performance of a student. Schmulian and Coetzee (2011) findings are in agreement with Cortright *et al.* (2011) and Traphagan *et al.* (2009) that the lack of attendance has a significant impact on a student's performance.

3.3.1.11 The Clark and Latshaw (2012) study

Clark and Latshaw (2012) conducted a study at an unspecified major urban university in the United States. The study had a sample of 77 undergraduate business students. It was argued that attendance by a student purely measures the effort made on the learners' behalf. However, attendance may have an impact on the quality of results achieved. This would mean a learner should perform better than he/she would have, had their attendance been low.

3.3.1.12 The Teixeira (2013) study

Teixeira (2013: 11) focused on the impact that class absenteeism has on academic performance. The study took place at the University of Portugal using 147 undergraduate economics students. Class absenteeism could decrease pass rates considerably. Alternatively, if a method of compulsory attendance is enforced, pass rates would increase considerably. This study found attendance positively influenced the pass rates achieved.

3.3.1.13 The Alanzi (2015) study

Between 2012 and 2013, Alanzi (2015) conducted a study to examine student performance in a Cost Accounting course at a university in Kuwait. A total of 156 students at the College of Business Studies formed the sample. The study examined the effect of age, gender, high school results and attendance on performance. The first three factors had no direct relationship to student performance and were not significant. However, attendance was a significant influencer of student performance at tertiary level. The higher a learner's attendance, the more successful a student would be in a course.

3.3.1.14 Summary on attendance and hypothesis H^1

A summary of these studies is provided in Table 3.1

Table 3.1: Studies examining the impact of attendance on student performance

Author(s)	Place	Sample	Findings
Durden and Ellis (1995)	An unspecified state university	Unspecified sample size. Sample was made up of groups of students taking a principles of economics module over three semesters.	Poor attendance at lectures has an impact on performance if absenteeism is consistent and excessive.
Blerkom (2001)	Pennsylvania State University in the United States of America	959 Psychology students	Higher class attendance affects performance positively.
Johnson *et al.* (2002)	Michigan Technological University	17 groups of students in a principles of finance course	Attendance had no significant impact on performance.
Young (2004)	United States of America	300 colleges	Technology has a negative impact on class attendance but not on student performance.
Marburger (2006)	Arkansas State University	39 students in the policy class and 38 in the no policy class. In total, the sample was 77.	When lectures were made compulsory, there had been an improvement in attendance and an improvement in student performance.
Traphagan *et al.* (2009)	South Western University in the United States of America	350 undergraduate geology students	Class attendance has a significant relationship to student performance.
Dobkin *et al.* (2010)	UC Santa Cruz Campus	Three large economics classes, sample size unspecified	Students achieving less than the grade point average were subjected to mandatory attendance; this, in turn, had significantly improved performance.
Cortright *et al.* (2011)	Wayne State University of Medicine in Detroit, Michigan	51 Physiology students	Attendance has a direct impact on student performance.
Schmulian and Coetzee (2011)	University of Pretoria, South Africa	400 students in total, made up of two groups which consisted of 200 students each	A positive correlation was found between class attendance and the academic performance of a student.

Clark and Latshaw (2012)	Not specified: Major Urban University in the United States of America	77 undergraduate business students	Attendance had no significant impact on performance.
Teixeira (2013)	University of Portugal	147 undergraduate economics students	Higher class attendance affects performance positively.
Alanzi (2015)	Unspecified university in Kuwait	156 students at the College of Business Studies	Attendance had a significant impact on student performance.

After surveying the studies listed in Table 3.1, some of the reasons why students did not attend lectures were found by Blerkom (2001) and Schmulian and Coetzee (2011) are:

- illness;
- time table clashes;
- traffic and transport issues; and
- over-sleeping.

Paisey and Paisey (2004) found that the reasons for students' poor attendance were due to:

- part time work;
- course work;
- illness and personal reasons (which included hangovers).

The above studies have indicated, through various groups of students in different environments, that the lack of class attendance does impact negatively on the performance of a student. Attendance is thus an important factor when determining student success and performance.

Regardless of the reasons why students tend to miss class, the studies suggested that learners who do not attend class are sacrificing valuable information and notes which are given during lecture time. This would mean a lack of understanding which could ultimately lead to poor performance.

H^1 is thus stated as follows: There is a positive relationship between student attendance and student performance.

The next section examines the impact of students' age on their academic performance.

3.3.2 Age

The studies discussed next highlight the variances in performance between mature-aged students and traditional students. Mature-aged students are those students who have work experience and are older in age; these students usually do not meet entrance requirements straight out of grade 12. Traditional students, on the other hand, are students who meet the entry criteria and would then proceed to tertiary education directly after grade 12. A non- traditional student may decide to enrol at another institution in order to upgrade his/her results, and, thereafter, return to tertiary education with the relevant credits.

3.3.2.1 The Richardson (1994) study

Richardson (1994) conducted research which surveyed literature and data obtained by prior studies using the study behaviour questionnaire which had been devised by J.B. Biggs. The questionnaire was administered to 249 first year students in an unspecified Australian university. The study concluded that mature-aged students are not deficient in their studies. These students possess certain skills and characteristics which enable them to outperform traditional students. In addition, mature-aged students are responsible and driven, as compared to younger students entering tertiary for the first time.

3.3.2.2 The Hoskins, Newstead and Dennis (1997) study

Hoskins *et al.* (1997) conducted a study at the University of Plymouth from 1991-1995 in the United Kingdom. Students used in this study were full time students who were able to complete their undergraduate degrees at their first attempt. A total of 6 866 students were analysed. Mature non-traditional students performed exceptionally when compared to traditional mature-aged and younger students. The study concluded that younger students who entered university traditionally had performed much better than younger

students who had entered university via non-traditional means (Hoskins *et al.* 1997). On the other hand, when students who entered via non-traditional means being 25 years of age and over were compared with students entering via traditional means, the mature-aged non-traditional student outperformed the mature-aged traditional student.

3.3.2.3 The Richardson and King (1998) study

This study, conducted at the Ohio State University, compared the older students to the younger students (Richardson and King 1998). The study argued that one is considered an adult, in that particular state, when they reach the age of 17. This is generally when students enter tertiary education in Ohio. In addition, the study added that what actually makes students young-age or mature-age students are their life experiences and the point at which they choose to enter tertiary education. A finding of this study was that older students actually perform well academically. Younger students at the university lacked time management skills which older students possessed. This was possibly one of the reasons why the older/mature-aged students were more successful than their younger counterparts. The authors stated that there is no evidence proving that mature-aged students lacked intellect due to age as compared to a younger student. Furthermore, Richardson and King (1998) recommend that, as mature-aged students are more successful and responsible when in tertiary education, universities should consider increasing their intake of these students.

3.3.2.4 The Cantwell, Archer and Bourke (2001) study

Cantwell *et al.* (2001) observed non-traditional students who enter university via alternative channels. The total sample size was made up of 9 215 first time entry students at the University of Newcastle in Australia. The study used a database in which records were kept for a period of three years. The reason for these students being classified as non-traditional is due to the fact that they would not have met the criteria for normal entry. Therefore, they would need to first obtain a qualification equivalent to the prerequisites in order to enter university a few years after completing high school. In this study, non-traditional mature-aged students were those students who enter university a few years after high school and sometimes have work experience. The following explanations are

provided about why these students enter university later than traditional younger aged students:

- finances;
- poor grade 12 results;
- discrimination; and/or
- high school dropout.

The study's results indicated that non-traditional students performed negatively (students who obtain a prior qualification or work experience to enroll into university) but mature-aged students performed positively (these students pursue their studies later in life). The analysis revealed a notable disadvantage in academic performance for students entering university via non-traditional qualifying programmes, but a positive result for mature aged students. Earlier studies conducted by the authors found that students, who entered university long after they had completed high school, had no difficulty coping with the subject content.

3.3.2.5 The Richardson (2006) study

Mature-aged students, as compared to younger students, lack vital study skills which are required at university (Richardson 2006). An examination of 98 students was conducted at an unspecified university working towards degrees in the following courses: psychology; sociology; and social anthropology. This study was conducted in 1990 over 20 weeks. Richardson (2006) noted that mature students did not have to meet the same entry requirements, which younger students had to meet. This is because older students usually have work or life experiences that compensate for the lack of qualification from prior schooling.

In this study (Richardson 2006) the performance of a mature-aged students was found to be significantly lower when compared to that of a younger student, when analyzed in the same degree course. There were no significant differences between a mature student and a younger student when tested in the same way, under the same circumstances and at the same time. Harper and Kember (1986: 220), as cited by Richardson (2006), also state that there is no solid evidence to support the statement "mature students lack basic

study skills". These researchers were of the opinion that mature students possess learning characteristics that educators are still trying to develop in younger students. Explanations for the findings by Harper and Kember (1986), as cited by Richardson (2006), are as follows:

- an intrinsic goal motivates mature students rather than vocational goals;
- younger students adapted to a surface approach to learning, and
- the life experience of a mature student enables a deeper approach towards studying.

According to Richardson (2006), mature students are more likely to complete their degree rather than a younger student. However, he also noted that there are contradictory studies that show no difference between the completion of a degree and a mature or younger student, as well as studies that show that younger students complete degrees more often than mature students do. In addition, the study concluded that, as mature students generally perform superior to younger students in a course, universities should consider increasing the intake of mature-aged students. This is also stated by the Richardson and King (1998) study.

3.3.2.6 The Ballester (2010) study

Ballester (2010) conducted a study with 3 219 students at the University of Barcelona. One of the factors considered was age. The study hypothesized that older students achieve a higher grade in financial accounting, as compared to younger students in the same course, based on the level of maturity and motivation which older learners are expected to possess. The study found that mature students do not perform significantly superior academically when they are compared to younger students in the same course.

3.3.2.7 The McCune, Hounsell, Christie, Cree and Tett (2010) study

In line with the previous study, McCune *et al.* (2010) followed the transition of students into a traditional Scottish university. This was a longitudinal study, started in 2006, using a total of 45 students over four year degree courses, such as teaching, social studies and childhood studies. The literature reviewed in this study suggested that older students are much more goal orientated, and they possess the motivation needed to go further in their

studies. In addition, these characteristics are rare in younger students as some of these students are not even sure of what they would like to achieve from their education.

McCune *et al.* (2010) showed that mature students are much more engaged and active when it comes to their studies, when compared to a younger control group. This, in turn, would mean a higher pass rate from non-traditional mature-aged students rather than traditional younger students. This study found that mature-aged students found more relevance and understanding in their work, and that the purpose of their studies was either due to circumstances in their lives that led them back to university or personal enrichment. A younger group of mature-aged students had reasons, such as career development, prior lack of finances and social growth, for studying at a later age than the average student.

3.3.2.8 The Nyikahadzoi, Matamande, Taderera and Mandimika (2013) study

Nyikahadzoi *et al.* (2013) conducted a study at the University of Zimbabwe which looked at the determinants of students' academic performance in accounting courses. The authors identified gender and age as the contributing factors. Considering the course has a larger intake of mature-aged students, which was in line with the Memorandum of Understanding between the University of Zimbabwe and the Institute of Chartered Accountants in Zimbabwe in 2010, the study found that these students performed poorly when compared to younger students. Furthermore, mature-aged students needed more time and effort in order to succeed when compared to younger students.

3.3.2.9 The Papageorgiou and Halabi (2014) study

A study by Papageorgiou and Halabi (2014) was conducted at the University of South Africa, the largest distance learning university in the country. Due to distance learning, it attracts a larger number of older students than other tertiary institutions. The study examined factors contributing towards student performance in a distance learning accounting course through three levels. It was found that age is not a significant factor when analysing student performance in Accounting level one. However, in Accounting levels two and three there were significant findings. Younger students performed better

than older students in the same accounting courses. The authors highlighted reasons for the differences, such as younger students being motivated and older students being held back by personal commitments and responsibilities.

3.3.2.10 The Jansen and De Villiers (2016) study

Jansen and De Villiers study (2016) conducted a study at the University of Western Cape in Cape Town, South Africa. Originally, 154 students had been included in the sample, however, four of these students were excluded, which resulted in a sample size of 150 third year accounting students. The study examined various factors which influence student performance; age being one of them. It was found that traditional (younger) students outperform mature-aged students.

3.3.2.11 Summary on age and hypothesis H^2

The studies discussed above are summarised in Table 3.2 below.

Table 3.2: Studies examining the influence of age on student performance

Author(s)	Place	Sample	Findings
Richardson (1994)	Unspecified University in Australia	249 first year students	Mature-aged students outperform younger students as they possess skills which younger students lack.
Hoskins *et al.* (1997)	University of Plymouth in the United Kingdom	6 866 undergraduate students	The study concluded that younger students outperform older students.
Richardson and King (1998)	Ohio State University, United States	Not disclosed	Mature-aged students perform better than younger students which should mean universities should increase mature- age intake.
Cantwell *et al.* (2001)	University of Newcastle, NSW, Australia	9 215 first time entry students	Non-traditional students do not perform as well as mature-aged students.
Richardson (2006)	Unspecified university	98 students	The study found the throughput rate to be higher for mature students when compared to younger students.
Ballester (2010)	An unspecified University in Barcelona, Spain	3 219 financial accounting students	The study found no superiority in academic performance between mature- aged students and younger students.
McCune *et al*. (2010)	Unnamed traditional Scottish University	45 students in a four year degree course	Mature-aged students perform better due to skills which they possess.

			These skills are lacking in younger students.
Nyikahadzoi *et al.* (2013)	University of Zimbabwe	211 first year accounting students	Younger students achieve better academic results than mature students do.
Papageorgiou and Halabi (2014)	University of South Africa	677 post graduate accounting students	Younger students perform better than older students do.
Jansen and De Villiers (2016)	University of Western Cape, Cape Town, South Africa	150 third year accounting students	Younger students outperform older students.

This section of the literature highlighted three types of students: mature-aged, traditional (younger) and non-traditional (younger students entering tertiary via alterative avenues) students. The literature on the impact of age on student performance indicates that mature-aged students possess certain characteristics that are essential to succeed at the tertiary level. Some of these characteristics are: being responsible; having proper time management skills; and being motivated. However, younger students also have certain skills essential to succeeding in tertiary education.

Most of the literature argued that mature-aged students have better pass rates when compared to traditional students (Richardson 1994; Richardson and King 1998; Cantwell *at al.* 2001; McCune *et al.* 2010). However, Richardson (2006) indicated that younger students produce richer results, as compared to mature students, as younger students are more accustomed to the teaching and learning process.

H^2 is thus stated as follows: There is no difference between students' performance and age.

The next section of this chapter examines how gender affects the academic performance of students.

3.3.3 Gender

This section examines literature that investigates the academic performance of male and female students. The following studies used gender as a factor impacting performance.

3.3.3.1 The Durden and Ellis (1995) study

In this study, questionnaires were administered to students taking the Principles of Economics course during spring and fall 1993-1994 (Durden and Ellis 1995). Although earlier studies seem to favour male students performing better in an Economics course, this study found no significant difference between the academic performance of male and female students. Both genders performed equally when analysed using gender as a factor influencing performance. However, the next study by Borg and Stranahan (2002), had contradictory results.

3.3.3.2 The Borg and Stranahan (2002a) study

Borg and Stranahan (2002a) looked at how personality types interrelate with race and gender and whether this has an impact on the performance of students in an upper level Economics module. The study used a sample size of 166 Economics students from the University of North Florida for the collection of data. Women, who were classified as introverts, performed exceptionally academically when compared to the extroverts across both genders. However, when analyzing just the male introverts and extroverts, it was found that male introverts did not show the same academic ability as female introverts. This led to the conclusion that female students do perform better than male students, and female introverts outperform female extroverts.

3.3.3.3 The Borg and Stranahan (2002b) study

Borg and Stranahan (2002b) used a sample of 119 Principles of Macro-economic students, at the University of North Florida. The following factors were used as indicators of student performance: race; gender; and temperament type. To elaborate on the testing and classification of temperament and gender, which was done for this study, personality types were classified by the authors as follows:

- Dionysian (SP)

SP students have a preference for physical participation in the learning process. SP's have a tendency to be competitive, they respond predominantly well to group projects.

- Epimethean (SJ)

SJ students have a learning style which is almost made for a traditional lecture-based classroom. SJ's require structure in the learning environment; they prefer a progressive arrangement of the learning process.

- Promethean (NT)

NT's have a habit of being independent learners. They are often very independent in the classroom. Unlike SJ's, NT students want to choose their own research topics, and they enjoy having some control over the subject material of the course.

- Apollonian (NF)

NF students revel in a fairly run classroom where there is adequate interaction with the other students and with the instructor. NF students delight in group projects when the group is cooperative rather than competitive.

The Borg and Stranahan (2002b) study found that females, with personality type NT and NF, performed significantly worse when compared to male students in the same grouping. However, female SP's and SJ's perform no differently to male students in the same grouping. Overall, it was determined that male students outperform female students in the area of Macro-economics.

3.3.3.4 The Marks (2008) study

Marks (2008) examined the performance of male and female students using data from an Organization for Economic Co-operation and Development (OECD) 2000 programme for international student assessment. The population was 172 000 students from 6 000 schools in 32 countries around the world. The age group of students used was fifteen year olds only. Although this study focused on school pupils, it is still relevant to this current study in view of its gender analysis.

The study identified a gap between genders when it came to academic performance at a young age. Earlier, there was a significant gap in Mathematics between genders. Male

students produced stronger results when compared to females. This was attributed to little importance being placed on the education of females in certain countries. In addition, the schooling systems in place had disadvantaged the female gender. When older students were analysed, the author found no difference in academic performance between genders. The study concluded that the gender gap, which had favoured male students in Mathematics, had been reduced to a point of insignificance. However, the study pointed out a new gap which favours female students in theoretical subjects rather than male students. To conclude, the gender gap still exists, however, it now favours female students in reading as opposed to favouring male students in Mathematics.

3.3.3.5 The Marks (2010) study

Marks (2010) conducted a study that looked at the importance of certain aspects of schooling and how it affects students in tertiary institutions; this study was an extension of the Marks (2008) study. The sample size consisted of 7 772 final year high school students in Australia. The data for this study were extracted from the OECD sample. In terms of gender, the study found that young female high school students in their final year had performed significantly better than male students in the same grouping. Marks (2010) suggested that a contributing factor for this result would be that females may have more endurance towards stress levels as compared to the male students. However, he also noted that the performance of students with a positive attitude towards their studies were not influenced by external factors.

3.3.3.6 The Nyikahadzoi *et al.* (2013) study

Nyikahadzoi *et al.* (2013) conducted research at the University of Zimbabwe using students who were taking an Accounting course at the time. Their research had been focused on determinants of students' academic performance. Their research found that male students performed significantly better academically in these Accounting courses when compared to the female students in the same courses. This finding is contradictory to other authors when looking at the gender gap (Borg and Stranahan 2002a; Marks 2008; Marks 2010). An interesting finding by this study was that a female student of a mature age was considered at risk of not achieving academic success.

3.3.3.7 The Papageorgiou and Halabi (2014) study

Papageorgiou and Halabi (2014) conducted a study which used gender as a factor at the University of South Africa. When looking at gender as a factor which affects the performance of students in the same distance Accounting course, they found that gender was not a significant factor which impacts on student performance. This finding could be in line with the gender equality practices which have been embedded in this generation, which shows gender to no longer be a differentiating or contributing factor in student performance (Papageorgiou and Halabi 2014).

3.3.3.8 The Jansen and De Villiers (2016) study

Jansen and De Villiers (2016) surveyed 85 female students and 49 male students in the University of the Western Cape in South Africa. For this specific group of students, male students outperformed female students. The study could not determine the reason why male students achieved higher academic results than female students in the same group. The authors suggested that further research in the area of performance and gender is needed.

3.3.3.9 Summary on Gender and hypothesis H^3

A summary of these studies is provided in Table 3.3.

Table 3.3: Studies examining the influence of gender on student performance

Author(s)	Place	Sample	Findings
Durden and Ellis (1995)	Unspecified state University	Unspecified sample size. Sample was made up of groups of students taking a Principles of Economics module over three semesters.	There is no difference in performance when analysed using gender as a factor.
Borg and Stranahan (2002a)	University of North Florida	166 Economics students	Women classified as introverts had performed exceptionally when compared to extroverts across both genders.
Borg and Stranahan (2002b)	University of North Florida	119 principle of Macro-economic students	Male students outperform female students in the area of Macro-economics.
Marks (2008)	32 unspecified OECD countries around the world	172 000 students from 6 000 schools	Male students no longer outperform female students in Mathematics. The gap has reduced. However, females are now significantly outperforming male students in theoretical subjects.

Marks (2010)	Australia	7 772 respondents from the 2005/2006 OECD study	Female students in their final year of high school outperform male students in the same grouping.
Nyikahadzoi *et al.* (2013)	University of Zimbabwe	211 first year accounting students	Male students performed significantly better academically in Accounting courses when compared to the female students.
Papageorgiou and Halabi (2014)	University of South Africa	677 post graduate accounting students	Gender was not a significant factor which impacts on student performance.
Jansen and De Villiers (2016)	University of the Western Cape in South Africa	85 female students and 49 male students, Total of 134 respondents for this particular factor	Male students outperformed females.

This section presented various studies examining differences in academic performance between the genders. Female students seem to outperform male students in subjects which are theory based, reading and in stressful situations. However, male students seem to excel in practical subjects, such as Mathematics. In addition, a few studies (Durden and Ellis 1995; Papageorgiou and Halabi 2014) found no significant differences between the genders and their academic performance.

H^3 is thus stated as follows: female students perform better than male students.

The next section of this chapter examines the influence of grade 12 results on the academic performance of students at tertiary level.

3.3.4 Grade 12 results

In South Africa, the term “grade 12” refers to the year in which a secondary school student completes high school. Grade 12 achievement is commonly known to be a predictor or measure of success with regards to most endeavours pursued afterwards. This section discusses those studies which isolated grade 12 student achievement as a predictor of success when scholars enter, or apply for entrance, into tertiary institutions.

3.3.4.1 The Evans (2000) study

Evans (2000) conducted research in Australia which looked at a few factors believed to hinder the transition of a high school student into a tertiary institution. One of the variables

of this study scrutinized examined the effect of earlier schooling on academic success. The study noted high school achievement as being a reliable predictor of success in tertiary education, seeing as entrance into these institutions is primarily based on results achieved from prior schooling. Evan's study (2000) found that secondary school success is strongly correlated with success at tertiary level. The study did not disclose the number of students included in the sample size as it was essentially a review of literature surrounding the factors recognized.

3.3.4.2 The Bitzer and Troskie-De Bruin (2004) study

Bitzer and Troskie-De Bruin (2004) conducted a study which aimed to provide some insight into which factors would impact on student performance at tertiary level, at the University of Stellenbosch in South Africa. Prior schooling and academic success during first year at university was factored into the study. The Alpha Baseline Questionnaire (ABQ) was used as a measuring instrument and focused on the 3 954 first year students at the institution in 2002. However, only 1 876 students completed the ABQ questionnaire and formed the sample population. In addition, the study adapted Tinto's Model of student departure for the theoretical framework. The study found that high school students, who were considered low achieving, were more passionate and self-confident towards their performance at university. Students, who were considered average based on high school performance, had a more realistic attitude. The study considered prior schooling to be of the utmost importance since university success was based on prior academic achievement. Furthermore, the study found that the transition from high school into tertiary education was still a barrier that affects student achievement during their first year in university.

3.3.4.3 The Du Plessis, Muller and Prinsloo (2005) study

Du Plessis *et al.* (2005) conducted a study at the University of South Africa (UNISA) using Accounting 101 students. The courses that were examined did not require a student to have Mathematics or Accounting, from prior schooling, in order to be admitted into the programme. The study performed an evaluation of performance between students who matriculated (completed grade 12) with Mathematics and Accounting and students who

did not. It found that Accounting in matric (grade 12) is an important indicator when predicting success of first year Accounting students at university level. In addition, grade 12 Mathematics results were also a contributing factor to success in first year accounting courses at UNISA. The next study provides similar results.

3.3.4.4 The Ballester (2010) study

Ballester (2010) conducted a study at the University of Barcelona, which observed some of the determinants of student performance in a Financial Accounting course. The study had a sample population of 3 219 who were registered for the course at the time. The study found that, if a learner came into the university with prior Accounting knowledge (Accounting done at high school/past schooling), the student will perform better than a student who does not have prior Accounting knowledge. In addition, Ballester (2010) found that those students who enter university with high grade 12 results would usually outperform those who do not have high entrance grades.

3.3.4.5 The Marks (2010) study

In keeping with the studies discussed in this section, Marks (2010) confirms that high school achievement has a significant bearing on student achievement at university. Grade 12 was the deciding factor of whether or not the student would be accepted into a particular course at the university. Marks (2010) states that prior schooling, or the academic achievement during a student's final year of study at high school, is a sturdy predictor of his/her performance when progressing into tertiary education. The study did not discuss the continuous performance of the students as they progress through university.

3.3.4.6 The Kukreja and Aali (2013) study

Kukreja and Aali (2013) investigated various determinants of student performance in Bahrain at the Ahlia University using 286 students from an introductory Accounting course. The study looked at both prior schooling and gender as two of the factors that determine student achievement. The study showed that, while gender had no significant

bearing on performance, high school Accounting or lower level Accounting subjects were major predictors of student success in subsequent Accounting courses/modules.

3.3.4.7 The Stainbank (2013) Study

Stainbank (2013:107) noted that most South African universities use Mathematics and English from a learner's grade 12 results in order to determine whether a student may be accepted into a commerce course. This study investigated the relationship between high school Mathematics and English and performance in university modules in 2009. It found that Mathematics is a significant predictor of student success at tertiary level. Furthermore, the study recommended increasing the entrance requirement for Mathematics as students scoring 50% and higher performed better than those who had scored below 50%. When looking at English, the study found no significant relationship between grade 12 English results and student performance in the modules being examined.

3.3.4.8 The Papageorgiou and Halabi (2014) study

According to Papageorgiou and Halabi (2014) who conducted a study at the University of South Africa using 677 post graduate Accounting students, a student's high school results in Mathematics is a solid predictor of performance achieved in tertiary Accounting courses. This study found a significant relationship between a strong Mathematics background and student performance at all three levels of an Accounting module. However, when looking at high school Accounting as an indicator of student performance at tertiary level, a significant relationship was found only at Accounting level one and not for Accounting levels two and three. Course work becomes further integrated and complex at levels two and three which explains why high school Accounting no longer has an effect on student success.

3.3.4.9 Summary on Grade 12 Results and hypothesis H^4

A summary of these studies is provided in Table 3.4.

Table 3.4: Studies examining the influence of Grade 12 on student performance

Author(s)	Place	Sample	Findings
Evans (2000)	Australia, institution unspecified	Unspecified, mainly a review of literature.	High school achievement is a strong predictor of tertiary success.
Bitzer and Troskie-De Bruin (2004)	University of Stellenbosch, South Africa	1 876 first year students who completed the ABQ questionnaire	Transitioning into tertiary education is still a factor which hinders performance of first year students.
Du Plessis *et al.* (2005)	University of South Africa	2 702 accounting students	Grade 12 achievement in Mathematics and Accounting is a reliable indicator of student success in university accounting courses.
Ballester (2010)	University of Barcelona, Spain	3 219 financial accounting students	Students with prior accounting knowledge tend to outperform those without.
Marks (2010)	Australia	7772 respondents from the 2005/2006 OECD study	High school achievement is a sturdy predictor of tertiary academic success.
Kukreja and Aali (2013)	Ahlia University, Bahrain	286 students from an introductory Accounting course	High school Accounting or lower level Accounting subjects were most important predictors of student accomplishment in subsequent accounting courses.
Stainbank (2013)	UKZN, South Africa	1 140 first year commerce students	Mathematics at Grade 12 level positively affects students' performance at university; English at Grade 12 level has no effect on 1st year students' performance.
Papageorgiou and Halabi (2014)	University of South Africa	677 post graduate Accounting students	Achievement in Mathematics at grade 12 showed significance at all three levels of a university Accounting course, however, Accounting at grade 12 level had only showed significance at level one Accounting at university.

The literature surveyed investigated how prior schooling and past achievement impact on academic achievement of a first time/year university student. Most studies were in agreement with prior schooling or grade 12 achievement being a reliable predictor of

tertiary success (Evans 2000; Ballester 2010; Marks 2010). In addition, Mathematics and Accounting were identified as factors impacting on performance in a tertiary institution.

H^5 is thus stated as follows: an above 60% pass in Mathematics, English and Accounting in grade 12 would result in a student performing better in Cost Accounting two at tertiary level.

The next section discusses language as a factor impacting on student performance.

3.3.5 Language

This section discusses the literature which considered the language barrier which may exist in teaching and learning, as well as the effect, if any, it may have on a student's academic performance. Language has been an element bearing on performance for many people who do not speak English as a first language. South Africa is rich in diversity since it has 11 official languages. English, however, is the language of instruction at most, if not all, educational institutions. This may well be an obstruction in achieving academic success when one cannot articulate the language fluently.

3.3.5.1 The Rosenthal, Baker and Ginsburg (1983) study

Rosenthal *et al.* (1983) conducted a study in the United States of America which used a national sample to investigate the effect of language on the performance of students in English and Mathematics. The sample comprised of 81 000 students from grades one to six across 240 schools. The home language under investigation was Spanish and it was compared to the language of instruction, which was English. Students who speak Spanish as a home language found it challenging to fully understand material which was taught to them in English. Concerns acknowledged in the study highlighted that students who struggle and are considered "low achieving", due to the presence of a language barrier, would either drop out before the finishing point or they would struggle during their studies and ultimately be unsuccessful.

Minor differences were found in the performance between English and Spanish speaking students. In the subject English, Spanish speaking students did not perform as well as English speaking students. However, in Mathematics, Spanish speaking students performed better than English speaking students. This was because these students had assistance with their homework from their parents, even though the home language used was Spanish. When assisted with reading by their parents, students did not perform well. In conclusion, this study showed an impact on performance in reading when home background and language were factored in. In addition, language is a concern in the teaching and learning practices of non-English speaking societies. Rosenthal *et al.* (1983) suggested that extra lessons should be an obligation for students whose home language is Spanish, to ensure they are on the same wave length as the English speaking students in the classroom.

3.3.5.2 The Howie (2003) study

Howie (2003) conducted a study in order to determine the proficiency of language amongst school pupils. Anecdotal evidence was that less than 10% of the South African population used English as a first language. The questionnaire was administered to school pupils across South Africa. The final population used in the data analysis totaled 194 schools in which 8 146 pupils participated in the study. Students found difficulty in understanding subject content as well as communicating their written answers in the English language, as opposed to their home language.

The study concluded that students with a good understanding of English performed considerably better than students who did not have a practical understanding of the English language. Students, whose home language was the language of instruction used in their Mathematics lessons at school, accomplished higher test scores than those students whose home language differed from the instructional language used in class. Another finding was that students, who came from a home where African languages were spoken, performed poorly in English as their second language. On the other hand, students who originated from homes in which Afrikaans or English is used as a first

language often achieved better academic results. In conclusion, language was found to be a barrier to non-English speaking students in South Africa.

3.3.5.3 The Du Plessis, Muller and Prinsloo (2005) study

Du Plessis *et al.* (2005) conducted their study at UNISA using 2702 learners who were, at the time, studying towards a degree in Accounting. A student who speaks English as a first language was expected to outperform a student who speaks English as a second language. This, in turn, indicates that learners for whom their second language is English would find it more challenging due to the language barrier. However, the study found that, although language did influence performance, it was not significant. Therefore, the study concluded that language was not linked to student performance.

3.3.5.4 The Brock-Utne (2007) study

Most people who reside in Africa practise the use of African languages exclusive to their culture to converse with one another (Brock-Utne 2007). An experiment, called the Language of Instruction in Tanzania and South Africa (LOITSA), ran for the period 2001-2006 and then for the period 2007-2012. The main aim of the experiment was to investigate the effect which language had on student performance, when a student is taught in a language which is not his/her home language. The study used information that was obtained by the LOITSA project.

The Brock-Utne (2007) study concentrated on students from Tanzania as well as South Africa. The data were specific to secondary schools in Tanzania as well as in Khayalitsha, in Cape Town, South Africa. The study used a sample population of an unspecified number of grade four and seven learners in both countries. Although this study did not focus on university students, its relevance to this current study is in its focus on home language and learning. Brock-Utne (2007) highlighted that, when given tasks, students struggled to answer efficiently in English. When asked to answer the task given in their home language, students excelled and displayed advanced words as well as expressions with little to no grammatical errors. The study concluded that students would understand, learn and perform better when the language of instruction is either their home language

or a language that they can understand. When an instruction is not in their home language, the opposite is true; students will perform poorly due to lack of understanding.

In order to analyse the effect of using English as a language of instruction on students who could not understand English, students in both countries were taught the same content in languages which they understood. The finding from this study was that, because students could not understand the language of instruction, they found it difficult to fathom subject content that was taught to them. The study also suggests that using English as a language of instruction limits learning amongst those students who do not understand the language fully.

3.3.5.5 The Marks (2010) study

Marks (2010), as noted previously, conducted a study in Australia using 7 772 respondents from the 2005/2006 OECD study. It was found that non-English speaking students, who had non-Australian born fathers, did not struggle in their schoolwork during their final year at high school. In addition, these students gained more entrance points for university. However, considering that non-English speaking students formed a small part of the sample population, the finding of this study was not significant.

3.3.5.6 The Jansen and De Villiers (2016) study

Jansen and De Villiers (2016) emphasised that the language barrier in South Africa is a topic that is debated by numerous academics. With most educational institutions only having English as the medium of communication, literature identified by Jansen and De Villiers (2016) found no correlation with the academic achievement of those students who spoke English as a second language and those who did not. Jansen and De Villiers (2016) also did not find a positive significant relationship between the English language and student performance. However, 66% of the sample population had indicated that for them, English was their first language. Moreover, the students who were analysed were in their third year of study. This finding indicated that there was a possibility that they may have grown accustomed to learning in English during their preceding years at the institution.

3.3.5.6 Summary on language and hypothesis H^5

A summary of these studies is provided in Table 3.5.

Table 3.5: Studies examining the influence of language on student performance

Author(s)	Place	Sample	Findings
Rosenthal *et al.* (1983)	United States of America	81 000 students from 240 schools	Spanish speaking students perform well in Mathematics but not in reading.
Howie (2003)	South Africa	8 146 students across 194 schools	Non-English speaking students perform poorly as compared to English and Afrikaans speaking students in the same grouping.
Du Plessis *et al.* (2005)	University of South Africa	2 702 Accounting students	Language was not a strong predictor of student performance.
Brock-Utne (2007)	School learners from Tanzania and Cape Town South Africa	An unspecified sample derived from the LOITSA project which comprised of grade four and seven learners in both countries.	Students who cannot properly articulate the language of instruction are disadvantaged academically.
Marks (2010)	Australia	7 772 respondents from the 2005/2006 OECD study PISA sample	A difference in performance was found which favoured non-English students, however, the results were not significant.
Jansen and De Villiers (2016)	University of the Western Cape in South Africa	150 third year accounting students	No correlation was found between being taught in English and academic performance.

Studies have indicated that students who speak English as a second language have trouble in the teaching and learning process (Rosenthal *et al.*1983; Howie 2003). However, other studies, such as Marks (2010: 277), have indicated that students who speak English as a second language outperform students who communicate in English as a first language. However, in the Marks (2010) study, non-English speaking students formed a minority in the sample population of the study. Du Plessis *et al.* (2005) could not find any significance between the language barrier and the academic performance of a student.

H^5 is thus stated as follows: students who speak English as their home language will perform better than those who do not.

A conceptual framework was developed for the study and is presented and discussed next.

3.3.6 Conceptual framework

To address the objectives of the current study, a conceptual model was created. The conceptual framework, shown in Figure 3.1, indicates the factors being tested as influencing performance. The independent variables, of grade 12 results, attendance, language and gender, are predicted to have a positive impact on the dependent variable, that is, performance. However, age is predicted to have no effect on performance. The model is shown next.

Independent Variables **Dependent Variable**

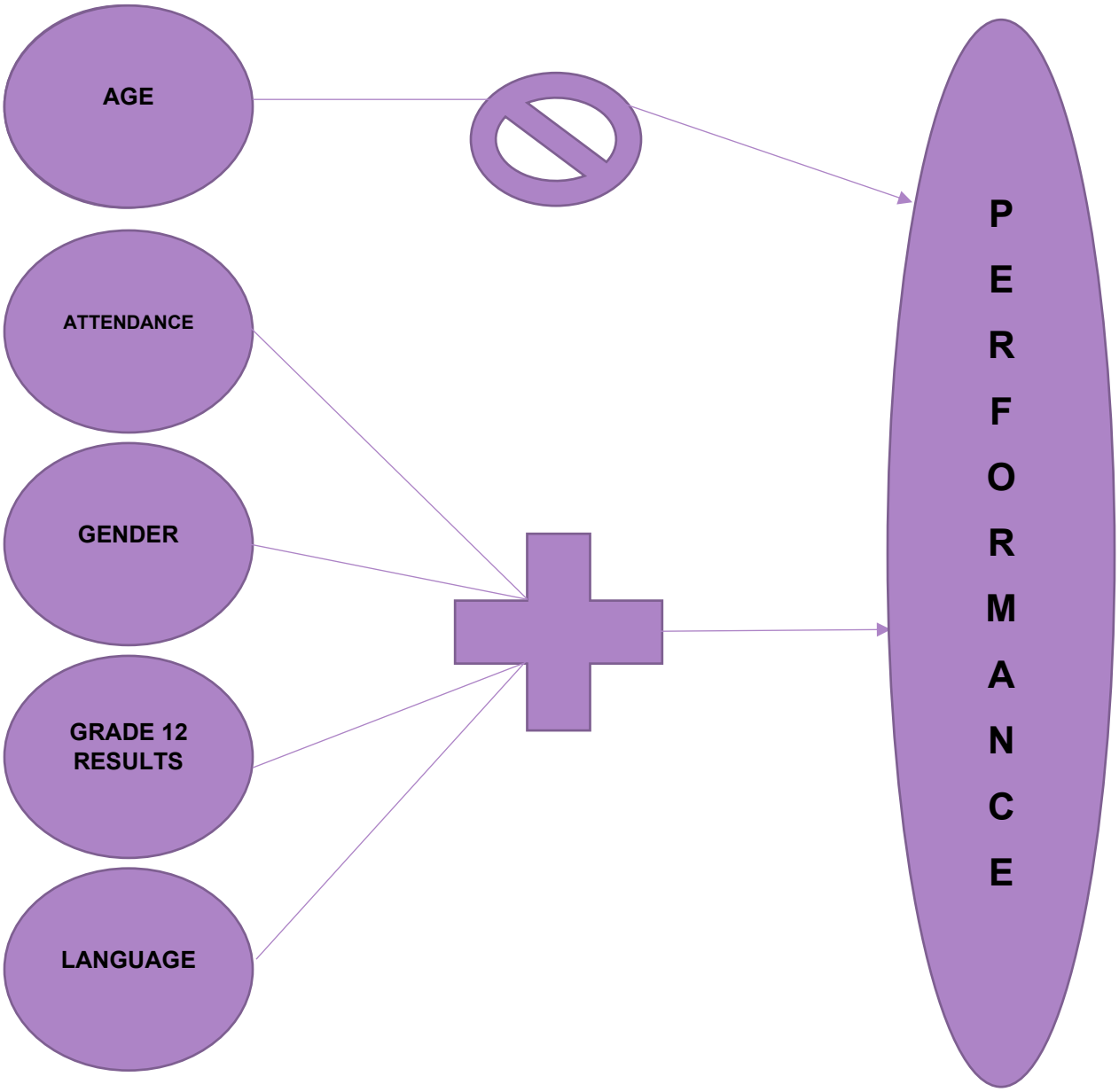

Figure 3.1: Conceptual framework

3.4 Overview

This chapter surveyed numerous studies that examined the impact of one or more of the five factors to be tested in this study. The literature presented has shown contradictory or similar findings. The variations in results achieved are attributed to demographic and psychographic differences of the studies, as well as external factors unique to each factor. The various authors (Hoskins *et al.* 1997; Barrow *et al.* 2009; Evans and Farley 1998; Dayioglu and Turut-Asik 2004) who studied factors affecting students' academic performance found that age, gender and prior qualification have an impact on the result achieved by a student at university.

Concerning grade 12 results, some of the findings have indicated that Accounting/Mathematics at high school level will impact positively on the performance of a student at the tertiary level. Moreover, when a student enters tertiary education with Accounting and Mathematics from high school, this student would be more successful than those who do not possess prior knowledge of either of these subjects. In terms of gender, the section found opposing results which established no difference between genders, or with males dominating in mathematical subjects and females dominating in theoretical subjects. Opposing results were also found for age, language and attendance.

Some studies supported the stated hypotheses, however, some studies had contradictory or inconclusive findings. There are many studies challenging the numerous factors that may influence performance, as seen above. The findings of this study will add to the body of evidence as to which factors affect academic performance positively, negatively or not at all.

The following chapter provides information on the research methodology used to meet this study's objectives.

CHAPTER FOUR

Research Methodology

4.1 Introduction

The preceding chapter discussed the literature which related to the independent variables being tested in this study. This chapter discusses the methodology employed to meet the objectives of this study. It begins by reviewing the research objectives which appeared in chapter one as well as the hypotheses which were developed to address the objectives. Thereafter, the research design provides the methodological map which guided this study. The questionnaire is described for a better understanding of how each division of the questionnaire linked to each of the variables. Furthermore, the statistical methods and analyses are described. Lastly, the chapter discusses the limitations of the study, reliability and validity, as well as confidentiality and ethical considerations.

4.2 Research objectives

As indicated in chapter one of this study, the following aim and objectives were formed.

4.2.1 Aim and objectives

The study aimed to determine which factors affect the academic performance of students studying Cost Accounting two at the DUT.

In order to achieve this aim, the two sub-objectives were:

- To identify the factors which may impact on the performance of Cost Accounting two students; and
- To determine if these factors have a significant association with a student's performance in Cost Accounting two.

To address the second sub-objective, the study used hypotheses testing.

4.2.2 Hypotheses

In order to achieve the above aim and objectives, five hypotheses were stated for statistical testing. These hypotheses are:

Hypotheses one (H^1) - Attendance

There is a positive relationship between student attendance and student performance.

Hypotheses two (H^2) - Age

There is no difference between students' performance and age.

Hypotheses three (H^3) - Gender

Female students perform better than male students.

Hypotheses four (H^4) - Grade 12 results

An above 60% pass in Mathematics, English and Accounting in grade 12 would result in a student performing better in Cost Accounting two at tertiary level.

Hypotheses five (H^5) - Language

Students who speak English as their home language will perform better than those who do not.

4.3 Research design

A positivist paradigm is often used when conducting quantitative research experiments. This particular paradigm assumes that human behaviour is influenced by external factors. A positivist paradigm uses empirical evidence, generalisation and hypothesis testing (Creswell 2009).

To conduct the research, a positivist paradigm was used.

4.3.1 Research approach

Due to the variables being tested using hypotheses, a link between these factors needed to be established. The best way to find a relationship between multiple variables is by means of measurement. Considering the above, a quantitative method was chosen. The quantitative method is a precise method of conducting research (Creswell 2009).

4.3.2 Research strategy

To address the aim and objectives, and in line with the quantitative approach adopted by this study, a questionnaire was used to collect the required data.

4.3.3 Time frame and type of study

To collect the data, a cross sectional, one-shot study was selected. A one-shot study is described as an occurrence influencing the result based on past events (Leedy and Ormrod 2005; Sekaran and Bougie 2010). This design was adopted because the study did not need to be conducted over a long period, as compared to longitudinal studies (Leedy and Ormrod 2005). Data were collected at one point in time and the information obtained was then analyzed (Sekaran and Bougie 2010).

4.4 Target population

4.4.1 Participants

In total, Cost Accounting two had 960 registered students for the module. This number included students from CMA, Financial Accounting (FA), Taxation, Auditing and the Pietermaritzburg diploma programmes. The participants chosen for of this study were CMA students at the DUT in their second year of study and were registered for Cost Accounting two in semester two of 2015.

Table 4.1 below summarizes the qualifications registered for the module at the time.

Table 4.1: Summary of qualifications	
Programme	Number of students registered for Cost Accounting two
Cost and Management Accounting (CMA)	180
Financial Accounting (FA)	240
Taxation	120
Auditing	120
Pietermaritzburg (CMA, FA, Taxation)	300
Total	**960**

4.4.2 Sampling

For the purpose of this study, the focus was on students who belonged to CMA (180 students). In light of CMA being a separate qualification, all students registered for Cost Accounting two, who belonged to CMA, were selected to answer the questionnaire. Choosing to use the entire population of CMA Cost Accounting two students at a specific point in time resulted in implementing a census study/strategy of all 180 CMA students (Siniscalco and Auriat 2011: 7). Conducting a census study gives assurance in terms of reliable data as it is a study which includes the entire population (White and McBurney 2012).

4.5 Measuring instrument

The main purpose of measurement in research is to be able to represent all data collected in a numerical/mathematical format (Graziono and Raulin 2013). The instrument used for this study was a questionnaire which consisted of 51 questions in total. These questions were open- and closed-ended questions as well as Likert scale type questions. According to Sapsford and Jupp (2008), open-ended questions are the type of questions in which a respondents are free to write about their feelings or experiences towards the situation presented to them. These responses are later sorted according to the specific categories into which they fit. Closed-ended questions are the opposite of open-ended questions. These questions were asked with a few options from which the respondents would have

to choose the most relevant answer to their current situation. The options are usually yes or no, true or false and Likert scale type questions.

4.5.1 Content and layout of the questionnaire

The questionnaire consisted of 51 items, with a level of measurement at a scale, nominal or an ordinal level. The questionnaire was divided into seven sections, which measured various themes, as illustrated below:

A Background of students;

B Language and how it impacts on learning;

C Attendance and the effect it has on performance;

D Age of a student and whether it impairs or enables a student in the classroom;

E Grade twelve results and the effect thereof on tertiary pass rates;

F Performance of a student; and

G Suggestions for improving performance through attendance and the opinions of the respondents.

4.5.2 The questionnaire

The questionnaire was divided into themes and consisted of a variety of questions. The questions were derived from the literature and personal knowledge of the course and students. The first part of the questionnaire focused on general information about the students and their course marks. These were questions one to four:

1. Percentage achieved in Cost Accounting 2 Module 1.

2. Place a tick in the relevant box to indicate your gender:

Gender	*Male*	*Female*

3. Place a tick in the box for your age category:

17-19	***20-22***	***23-25***	***26-29***	***30-over***

4. Place a tick in the appropriate box to indicate your home language:

English	***Zulu***	***Xhosa***	***Afrikaans***	***Northern Sotho***	***Tswana***
Sotho	***Tsonga***	***Swazi***	***Venda***	***Ndebele***	***Other***

Questions five to nine of the questionnaire were Likert scale type questions in which respondents were asked to rate their views on how language affects their performance in Cost Accounting two.

	Strongly Disagree	***Disagree***	***Neutral***	***Agree***	***Strongly Agree***
5. Being taught in a different language makes understanding difficult for me;					
6. I would prefer to be taught in my home language;					
7. If I am taught in my home language my understanding of Cost Accounting 2 would improve;					
8. If my understanding of the language I am being taught in improves my performance would also improve;					
9. I do not have a good understanding of the language I am being taught in at the institution.					

Question 10 asked respondents exactly how many lectures of Cost Accounting two they had attended on a weekly basis; this ranged from zero to four. Questions 11 and 12 asked for possible reasons behind non-attendance of lectures during the week. Thereafter, questions 13 to 17 asked students for their opinions on whether their attendance would improve if their course mark depended on it, how blackboard impacts on their attendance at lectures and performance as well as how lectures aid them in learning the course content. These questions are shown below.

10. *Place a tick in the appropriate box:*

The number of Cost Accounting lectures I attend on a weekly basis:

0	*1*	*2*	*3*	*4*

11. *If you are not able to attend all or some lectures every week, please select the reason/s most relevant to you and place a tick in the box provided:*

Reasons:	***Tick***
I am in full time employment, which is why I miss lectures.	
I am in Part time employment, which is why I miss some lectures.	
I have timetable clashes, which is why I cannot attend every lecture.	
I only miss lectures when I am not well.	
I sometimes miss lectures because of transport issues, which are unavoidable.	
I do not attend as often as I am supposed to because of other reasons.	

12. *If you have selected option "other reasons" please state the reason why you are not able to attend as often as you are supposed to.*

Read the statements provided below and state your agreement or disagreement with each statement by placing a tick in the relevant box:

	Strongly Disagree	***Disagree***	***Neutral***	***Agree***	***Strongly Agree***
13. I would attend all lectures if they are made compulsory;					
14. I would attend more lectures if a % of my DP depended on this;					
15. Information communicated to me during lectures can be picked up from a text book;					
16. I prefer self-study via blackboard rather than lectures;					
17. Information provided to me via blackboard positively impacts on my performance in Cost Accounting.					

Questions 18 to 26 of the questionnaire focused on mature-aged students versus traditional-aged students. To help students differentiate between mature- and traditional-aged students, a short description was provided before the questions were posed.

Students could then identify with being either mature-aged or traditional-aged and would answer accordingly.

Question 26 tested how many of the sample were employed, either full time or part time, and how many are just full time/part time students. Usually, part time students are employed; however, it is not common for full time students to be employed.
These questions and definitions are shown below.

There are many assumptions surrounding mature aged students and traditional aged students, kindly state your agreement or disagreement towards the statements provided below by placing a tick in the relevant box:

Definitions
Mature aged students: Older students/ students with full time work experience.
Traditional students: Students who have completed their schooling and have met the prerequisites to enter tertiary education.

	Strongly Disagree	***Disagree***	***Neutral***	***Agree***	***Strongly Agree***
18. I am a mature aged student;					
19. I find it difficult to understand subject content because I am a mature aged student;					
20. It is very difficult to adjust to the teaching and learning process because I have been out of school for a longer period of time;					
21. As a mature student, I am determined to perform well because I know how important an education is in the working world;					
22. I am a traditional student;					
23. A traditional student finds it easier to understand subject content;					
24. Traditional students are more accustomed to the teaching and learning process;					
25. Traditional students are mature enough to know the importance of an education.					

26. Place a tick in the most relevant box's pertaining to your employment status.

Employed full time	
Employed part time	
Full Time Student	
Part time Student	

The following ten questions, being questions 27 to 37, focused on students' high school results in Mathematics, English and Accounting. These questions aimed to determine if high school results had an impact on Cost Accounting two results. Students were also asked about the school that they had attended, as well as whether they felt that their grade twelve pass affected their performance at their current level in tertiary education. These questions are presented below.

27. *The percentage pass that you had achieved in Mathematics___ or Mathematics Literacy___ in Grade 12. (Select either pure Mathematics or Mathematics literacy, by placing an X on the line provided next to the subject).*

30-40%	*41-50%*	*51-60%*	*61-70%*	*71-80%*	*81-100%*	*N/A*

28. *The Percentage pass that you achieved in English Home_____ or English First Additional in Grade 12. (Select either pure English Home or English First Additional, by placing an X on the line provided next to the subject).*

30-40%	*41-50%*	*51-60%*	*61-70%*	*71-80%*	*81-100%*

29. *The percentage pass that you had achieved in Accounting in Grade 12*

30-40%	*41-50%*	*51-60%*	*61-70%*	*71-80%*	*81-100%*	*N/A*

30. *Which High School did you attend?*

Read the statements provided below and state your feelings on each statement by placing a tick in the relevant box:

	Strongly Disagree	***Disagree***	***Neutral***	***Agree***	***Strongly Agree***
31. My pass in Mathematics at grade twelve level has impacted positively on my understanding of Cost Accounting two;					
32. My pass in Accounting at grade twelve level has impacted positively on my understanding of Cost Accounting two;					
33. My pass in English at grade twelve level has impacted positively on my understanding of Cost Accounting two;					
34. I feel the need to work harder than I did to pass grade twelve;					
35. Tertiary examinations are more difficult than the grade twelve final exams;					
36. Although I did not perform as well as others in grade twelve, I have ensured that I perform exceptionally at DUT;					
37. My performance has been constant from grade twelve up until my second year at DUT.					

Questions 38 to 43 asked students for their opinions on all the factors being examined in this study. It was also used as a means to determine the accuracy of certain questions and to interpret students' views on how age and gender are perceived to impact on performance.

Read the statements provided, thereafter, place a tick in the box which best describes your feelings towards the statement.

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
38.My attendance at Cost Accounting two lectures results in good performance;					
39.My age positively impacts on my performance;					
40.Female students outperform male students in Cost Accounting 2;					
41.Having achieved good results in grade 12 has resulted in a better understanding of Cost Accounting two;					
42. My home language does not affect my performance negatively.					

43. *The table below represents your average percentage pass in Cost Accounting two Module 1: Place a tick in the appropriate box.*

0-30%	*31-50%*	*51-70%*	*71-100%*

In the following section, questions 44 to 49, respondents were presented with a possible scenario. They were asked to analyze the given scenario, which was based on observations, and select the most suitable option according to how they felt about each statement provided.

Read the scenario below and rate the statements, by ticking the appropriate box, which follows thereafter:
"The Department of Management Accounting has decided to implement a new system of assessment. This method will involve unscheduled tests which will take place once every two weeks, these assessments will form a part of your DP which will determine whether you will be permitted to write test 1 or test 2"
What are your views on the above scenario?

	Strongly Disagree	***Disagree***	***Neutral***	***Agree***	***Strongly Agree***
44. My attendance will improve.					
45. I attend all lectures.					
46. I will only attend on test days.					
47. I find the above scenario unrealistic.					
48. I find that the above scenario would help us prepare better for tests and exams.					
49. It is an excellent idea.					

Questions 50 and 51 were open-ended questions. These questions asked students for their opinion on what they believe affects their performance. Question 50 focused on Cost Accounting two and question 51 was much broader as it enquired about what students believe affects their overall performance at university.

Open ended questions:

50. List 3 factors which you believe affects your performance as a Cost Accounting 2 student.

51. Briefly state your views, which may not have been covered in this questionnaire, on the factors that affect your performance as a student.

4.5.3 Consent letter and letter of information

A letter of information explaining the research was attached to the consent letter. The document explained to the participants the nature and purpose of the study. The letter clarified that if they chose to answer the questionnaire, their identities would be kept secret and their answers confidential. They were also assured that the information obtained will only be used for the purpose of this study. These letters are contained in appendix one and appendix two.

4.5.4 Pre-testing the questionnaire

Before the questionnaires were administered to the students studying Cost Accounting two in the second semester, it was first administered to an expert group of staff members in the Department of Management Accounting at the DUT. This group was an expert group because they were considered subject experts of Cost Accounting two. Furthermore, they lectured the students who were the target population and have the relevant research experience. A total of five staff members were asked to kindly review the draft of the questionnaire and provide feedback. After taking a few days to look at the questionnaire, individual meetings were held with each of the staff members. These staff members provided valuable input on how to improve the questions. The feedback received was extensively discussed and considered. Once the questionnaire was revised and adjusted, as suggested by the expert group, the next draft of the questionnaire was subsequently subjected to a pilot test.

4.5.5 Pilot-testing the questionnaire

A pilot-test forms a vital part of pre-testing the questionnaire. It entails choosing a small group of participants, who do not form a part of the final population, to answer the questionnaire for the study. These participants are usually made up of a variety of different types of people who would be most likely answering the questionnaire when it is finally ready for administration. A pilot-test assists in coding responses for the final

administration of the measuring instrument. In addition, it assists with perfecting the data collection method (Sapsford and Jupp 2008).

A pilot-test with a sample set of 13 students was conducted. These students were not included in the main population of the study. A statistician thereafter processed the completed questionnaires. Minor adjustments were made to some questions after pilot-testing the questionnaire. Finally, the redrafted questionnaire became the final questionnaire ready for distribution to CMA students studying Cost Accounting two at the DUT at that point in time.

4.6 Recruitment process and data collection methods

Around the time in which the questionnaires were administered to the population, there were student protests at the DUT. Consequently, many challenges were faced when attempting to collect data from the selected group. Students were unavailable due to lectures being disrupted on a daily basis. It became challenging to administer the questionnaire due to lack of attendance. The time frame allocated for the collection of data had been exhausted. When the situation at the university normalized, the questionnaires were administered to the population on the day the students had to write their Costing Accounting two control test. This ensured maximum possible attendance at a given point in time.

4.6.1 Response rate

The data were collected at one point in time from the entire population. The total population of students which the questionnaire was supposed to reach was 180 CMA students. Due to the student protests, only 165 students were available to respond to the questionnaire. Of the 165 students who answered the questionnaires, seven responses were not valid. Therefore, 158 questionnaires were used for the analysis. The response rate was, therefore, 87.8%.

4.7 Data preparation

Once collected, the questionnaires were handed to the statistician who captured the data onto SPSS version 23.0. Unfortunately, not every student answered every question. However, this did not affect the validity or reliability of the data collected. Furthermore, a thematic approach was adopted for the preparation of data. A categorisation structure was set up before entry. This enabled discrepancies and blank answers to be managed and controlled (Sekaran and Bougie 2010).

4.8 Data analysis

Data analysis consists of inspecting, classifying, challenging and connecting measurable information in order to respond to the primary research question (Yin 2003:28). Data, which were collected using a questionnaire and prepared by a statistician using SPSS 23.0, were analysed. This study was a cross sectional study that used a quantitative mono-method. Using quantitative research methods provides findings which are reliable and precise. In order to address the research objectives and hypotheses set out at the beginning, a deductive approach was selected. Finally, an epistemological philosophy was employed as this study uses positivism as interpretivism.

In order to effectively interpret the collected data, descriptive statistics was used. A statistical test is performed in order to find significance amongst the variables. It is also known to test assumptions about a population using a sample. This approach was adopted so that informed decisions could be made when carrying out the research project. Raw data, being data that has not been analysed and summarised, do not provide any value to a study (Peck, Olsen and Devore 2011). However, once analysed and summarised, the data offers clarity and significance by finding meaning amongst variables.

4.9 Statistical preparation and analysis of the data

As mentioned above, the data were collected and thereafter handed to a statistician to perform the analysis. The data were coded and captured through SPSS 23.0. When testing for statistical significance, the degree of confidence derived from the results

generated during probability sampling is considered a measure which can be generalised to the entire population (Greener 2008).

4.9.1 Statistical presentation of the data

To summarise the data, measures of central tendency were used. These were the mean and median when the results of Likert scale questions were presented. Statistical testing of the data was done as follows:

a) When analysing variables, the association between them were evident and interrelated. Moreover, not all variables will have an impact on the other. However, it is important to note that, in this study, the independent variables and the dependant variable are expected to have a relationship (Greener 2008:60);

b) Data were analysed using cross tabulation in order to understand and describe the population. Cross tabulations were used to show the frequency which also included percentages when finding the association between the variables (Greener 2008:60);

c) Pearson's correlation coefficient (r) was used to measure the relationship which exists between variables. Zero to one indicates the relationship has a positive correlation, which is stronger towards one, between identified variables. However, a negative value shows a negative relationship (Greener 2008:62);

d) Continuing from Pearson's correlation coefficient, a coefficient of determination was used. This is also known as a regression analysis. In order to derive the coefficient of determination, the "r" value is multiplied by 100. This test provides the level of variation between the dependant and independent variables in the form of a percentage (Greener 2008:62);

e) In addition, the Spearman's rho (p) produces similar results as Pearson's (r) test. In conclusion, a multiple regression analysis shows a numerical relationship between variables (Anderson, Bey and Weaver 2010);

f) Testing for significance was done by first formulating hypotheses. The "p" value (chi-square test) is used to indicate the level of significance when testing the generated hypotheses between variables. This type of analysis is to provide assurance when testing for significance (Greener 2008:63);

g) The Kolmogorov-Smirnov test was applied when data were ranked. In this study, each section of the measuring instrument was thematic. Furthermore, the test indicated the probability of differences amongst two or more groupings in an analysis;

h) A t-test was used to show any variances between groupings (Greener 2008:64). The t-test uses mean values in order to investigate the level of significance between variables (Anderson, Sweeney, Williams, Freeman and Shoesmith, 2010);

i) The Mann-Whitney-U test was used to test for any significant differences in responses to questions between gender and home language;

j) The traditional approach to reporting a result requires a statement of statistical significance. In the tables which follow in chapter five, a p-value was created from the test statistics. A significant result is indicated with "$p < 0.05$". These values are highlighted according to strength of significance using the following: *, **, ***;

k) A correlation matrix was used to test the strength of the relationships between the variables; and

l) Finally, a regression analyses was used to test the five hypotheses of the study.

4.10 Limitations of the research methodology

The data were collected on one day when all students were expected to write an assessment. However, administering the questionnaire before the assessment may have excluded those who were late or absent for other reasons. This possibly affected the response rate.

This research focused on students at the DUT, Department of Management Accounting. The subject used for this study was Cost Accounting two. Therefore, only students registered for this programme were selected. This study is thus limited to this particular university and to students in Accounting-related fields only, and the results cannot be generalised to other programmes.

4.11 Reliability and validity

To ensure validity, a census sample population was selected.

In order to ensure reliability of responses, a stability coefficient method was used.

Table 4.2 displays the results of the Cronbach's alpha test.

Table 4.2: Cronbach's alpha score for all items which constituted the questionnaire	
Section	**Cronbach's Alpha**
B Language and how it impacts on learning	0.72
C Attendance and the effect it has on performance	0.62
D Age of a student and whether it impairs or enables a student in the classroom	0.58
E Grade twelve results and the effect thereof on tertiary pass rates	0.71
F Performance of a student	0.39
G Suggestions for improving performance through attendance and the opinions of the respondents	0.88
Overall	**0.82**

The reliability scores for all sections exceed or approach the suggested Cronbach's alpha value of 0.600 for a newly developed construct. This indicates a degree of satisfactory, dependable scoring for these sections of the research. Only section F had a score which is lower than the norm. The primary reason for this is that the questions which comprised this section measured various subthemes that were not related to each another. As a result, the value was accepted.

4.12 Confidentiality and ethical considerations

The intentions of the research, as well as the aims and objectives of the proposed research project, were explained to all students. Thereafter, all students, who participated, were given the assurance of confidentiality.

4.12.1 Anonymity

All participants remained anonymous. The questionnaire did not request any personal information from the participants. All findings are solely for the purpose of this study and confidentiality was a priority.

4.12.2 Ethical clearance

The study was conducted using students from the DUT. Therefore, ethical clearance was needed from the DUT. In light of this requirement, an application was made to the Institutional Research Ethics Committee (IREC). The application was approved by the IREC and proof thereof is shown in appendix five at the end of this dissertation.

4.13 Overview

Chapter four covered the methodology which was used in order to accomplish the research objectives as set out in chapter one. The research design, target population, data preparation and analysis were explained and justified. The questionnaire was presented and discussed in sections as a thematic approach was implemented. The type of testing which the data were subjected to as well as the methods of analysis were discussed.

The limitations of the research explained that the study and its findings are limited to the DUT's Department of Management Accounting only. Furthermore, the reliability and validity of the current study were explained. Lastly, the chapter provided an outline of the confidentiality and ethical considerations. The next chapter presents and analyses the findings of the study.

CHAPTER FIVE

Presentation and interpretation of the findings

5.1 Introduction

The objective of this chapter is to present and interpret the findings obtained from the questionnaire. The chapter sets out to answer the research objectives which directed the examination into the factors which may affect student performance. The first section presents demographic information which provides the background of the students. Thereafter, factors perceived to affect performance are discussed under section 5.4. Lastly, section 5.5 will conclude with testing of the hypotheses using two tests which aim to assess the relationship between variables as well as the strength of the correlation. The chapter firstly recaps the research aims, objectives and the hypotheses generated in chapter one, before discussing and interpreting the findings of the current study.

5.2 Aim, objectives and hypotheses

The main aim of this study was to determine which factors affect the performance of students studying Cost Accounting two at DUT. To recap, the sub-objectives of this study were:

- To identify the factors which may impact on the performance of Cost Accounting two students; and
- To determine if these factors have a significant association with a student's performance in Cost Accounting two.

To test the second sub-objective, the following hypotheses were generated:

Hypotheses one (H^1) - Attendance

Higher attendance at lectures is most likely to produce better results.

Hypotheses two (H^2) - Age

There is no difference between students' performance and age.

Hypotheses three (H^3) - Gender

Female students perform much better than male students.

Hypotheses four (H^4) - Language

Students who speak English as their home language will perform better than those who do not.

Hypotheses five (H^5) - Grade 12 results

An above 60% pass in Mathematics, English and Accounting in grade 12 would result in a student performing better in Cost Accounting two at tertiary level.

5.3 Demographics

To provide an in-depth analysis of the results, the questionnaire first asked the respondents to provide background information. An analysis of the background information is presented next.

5.3.1 Age and gender

The age and gender of students are presented in Table 5.1.

Table 5.1: Age and gender

			Gender		Total
			Male	Female	
Age (years)	17 - 19	Count	29	15	44
		% within Age	65.9	34.1	100
		% within Gender	44.6	16.7	28.4
		% of Total	18.7	9.7	28.4
	20 - 22	Count	32	53	85
		% within Age	37.6	62.4	100
		% within Gender	49.2	58.9	54.8
		% of Total	20.6	34.2	54.8
	23 - 25	Count	2	21	23
		% within Age	8.7	91.3	100
		% within Gender	3.1	23.3	14.8
		% of Total	1.3	13.5	14.8
	30+	Count	2	1	3
		% within Age	66.7	33.3	100
		% within Gender	3.1	1.1	1.9
		% of Total	1.3	0.6	1.9
Total		Count	65	90	155
		% within Age	41.9	58.1	100
		% within Gender	100	100	100
		% of Total	41.9	58.1	100

Out of 158 responses, 155 answered the question on age. Table 5.1 shows that most students (54.8%) fell into the 20-22 years age division. Of the 85 students who fell into this category, 53 students (34.2%) were female. A total of 44 students are between 17 – 19 years old out of the 155 respondents. In this age division, the male gender dominates

with 29 out of the 44 students being male students. The data indicate that male students are enrolling at a younger age than female students. Overall, the proportion of males to females is roughly 2:3 (41.9%: 58.1%). The age group of 23 to 25 years shows 8.7% (2) were male whereas 91.3 (21) were female. The 23 to 25 year age category shows that more female students enrol at an older age than male students.

According to the literature presented in chapter three, there are many contributing factors of why students choose to enter university at a later stage, as opposed to directly after high school (Hoskins *et al.* 1997; McCune *et al*. 2010; Papageorgiou and Halabi 2014; Nyikahadzoi *et al*. 2013). One of the reasons why students may decide to enrol university at a later stage is because of financial stability (Cantwell *et al*. 2001). Students may only have the necessary funds to enrol at a later stage.

The difference between traditional- and non-traditional students was measured by asking the respondents to indicate into which age category they fell. Traditional students are the younger age groups in the 17-22 years category. These students would have entered tertiary education directly or soon after high school; students usually enter for the first time between the ages of 17-18. Mature-aged or non-traditional students are those who enter tertiary education later on in life.

Table 5.1 shows that the majority of the students were traditional students who fell into the 17-22 years of age category. Only 26 respondents (16.7%) of the 155 respondents fell into the mature-aged category (i.e., non-traditional students).

5.3.2 Performance in Cost Accounting two

Table 5.2 shows the students' percentage pass in Cost Accounting two according to gender.

Table 5.2: Performance in Cost Accounting two and gender

			Gender		Total
			Male	Female	
Percentage	**0-50%**	Count	3	6	9
		% within Gender	6.3	7.8	7.2
	51-60%	Count	13	24	37
		% within Gender	27.2	31.2	29.6
	61-70%	Count	23	39	62
		% within Gender	48	50.7	49.6
	71-80%	Count	7	8	15
		% within Gender	14.7	10.4	12
	81-90%	Count	1	0	1
		% within Gender	2.1	0	0.8
	91-100%	Count	1	0	1
		% within Gender	2.1	0	0.8
TOTAL		**Count**	**48**	**77**	**125**
		% within Gender	**100**	**100**	**100**

Table 5.2 shows, that although male students outperformed female students in the higher categories (i.e. 81%-100%), based on percentages within the gender, female students outperformed male students in all other passing categories (i.e., 51%-80%). As only 125 students answered this question, these results may indicate that more female students outperform male students in most categories.

From the studies considered in chapter three, the Durden and Ellis (1995) and the Papageorgiou and Halabi (2014) studies indicated that there are no significant differences in performance between genders. However, Marks (2008; 2010) found that female students outperform male students academically. Supporting the previous study, the Borg and Stranahan (2002a) study found that introvert females outperformed extrovert

students across genders. However, Borg and Stranahan (2002b) found that male students outperform female students in subjects such as Macro-economics.

It is clear from Table 5.2 that most respondents scored between 50% and 70% in Cost Accounting two. The next section analyses the home language of respondents.

5.3.3 Language

Table 5.3 shows that 158 students answered the question on their home language.

Table 5.3: Home language and gender

			Gender		Total
			Male	Female	
Home language	**English**	Count	10	37	47
		% within Gender	14.9	40.7	29.7
	Zulu	Count	45	48	93
		% within Gender	67.2	52.7	58.9
	Xhosa	Count	2	4	6
		% within Gender	3	4.4	3.8
	Northern Sotho	Count	1	0	1
		% within Gender	1.5	0	0.6
	Tswana	Count	1	0	1
		% within Gender	1.5	0	0.6
	Sotho	Count	0	1	1
		% within Gender	0.0	1.1	0.6
	Swazi	Count	1	1	2
		% within Gender	1.5	1.1	1.3
	Venda	Count	4	0	4
		% within Gender	6	0	2.5
	Ndebele	Count	1	0	1
		% within Gender	1.5	0	0.6
	Other	Count	2	0	2
		% within Gender	3	0	1.3
Total		**Count**	**67**	**91**	**158**
		% within Gender	**100**	**100**	**100**

Language is one of the factors which was assumed to affect student performance for the purposes of this study. Table 5.3 above analysed the responses according to gender and according to those who speak English as a home language and those who do not (i.e., English second-language students). Aside from English, students were offered a choice of nine other languages. More than half the students (58.9%) indicated their home language to be IsiZulu. There was not much difference between genders when analysing IsiZulu. English was the second most popular language and was the home language for 47 (29.7%) of the 158 respondents. Of the 47 students (29.7%), most English speaking students were female (37 students or 78.7%).

Of the remaining eight languages which were available for students to select as their home language, all were in the minority with between one to six students indicating that their home language was not either English or IsiZulu. As most respondents have English as a second language (ESL), this may be a barrier those students who are being taught Cost Accounting two in English.

From the literature surveyed, Rosenthal *et al*. (1983), Howie (2003), Du Plessis *et al*. (2005), and Brock-Utne (2007) all concluded that, if English is not the first language of a student who is taught in English, the student will experience added difficulty. Marks (2010), however, found contradictory results when conducting a study in Australia. Marks (2010) found that students who speak ESL do not experience any difficulty when taught in a language which is different from their first language.

The next section discusses the attendance of the respondents.

5.3.4 Attendance

Table 5.4 shows students' attendance at lectures on a weekly basis analysed according to gender. Only 153 students answered this question.

Table 5.4: Attendance and gender

			Gender		Total
			Male	**Female**	
The number of Cost Accounting lectures I attend on a weekly basis	**1.00**	Count	0	1	1
		% within Gender	0	1.1	0.7
	2.00	Count	0	2	2
		% within Gender	0	2.2	1.3
	3.00	Count	9	21	30
		% within Gender	14.5	23.1	19.6
	4.00	Count	53	67	120
		% within Gender	85.5	73.6	78.4
Total		Count	62	91	153
		% within Gender	**100**	**100**	**100**

Table 5.4 shows that most students (78.4%) do attend four lectures per week. In this category, male students have a higher attendance rate than female students (85.5% compared to 73.6%). Male students also indicated they do not attend less than three lectures a week. The following studies (that is, Durden and Ellis 1995; Blerkom 2001; Traphagan *et al.* 2009; Schmulian and Coetzee 2011; Teixeira 2013) found that attendance has a direct impact on the academic performance of a student. However, Cortright *et al*. (2011) argued that attendance, when analysed according to gender, does not have a direct impact on the academic performance of either gender.

The next section discusses the employment status of the respondents.

5.3.5 Employment status

The employment status of the students is shown in Table 5.5. Only 151 students answered the question on employment.

Table 5.5: Employment status and gender

			Gender		Total
			Male	Female	
Employment status	**Employed full time**	Count	1	0	1
		% within Gender	1.6	0	0.7
	Employed part time	Count	0	3	3
		% within Gender	0	3.4	2.0
	Full time student	Count	61	86	147
		% within Gender	98.4	96.6	97.4
Total		**Count**	**62**	**89**	**151**
		% within Gender	**100**	**100**	**100**

Table 5.5 indicates that, out of 151 students, only four are employed. Of the four students who are employed, three are female students who work part time and one is a male student who works full time. These results are expected as all students are expected to register for full time study. Therefore, in terms of gender, there is no difference in the employment status of male and female students.

5.3.6 Mathematics in grade 12

Table 5.6 shows the number of male and female respondents who took Mathematics and Mathematics literacy.

Table 5.6: Type of Mathematics taken in high school and gender

			Gender		Total
			Male	Female	
Grade 12	**Mathematics**	Count	36	43	79
		% within Gender	76.6	64.2	69.3
	Mathematics literacy	Count	11	24	35
		% within Gender	23.4	35.8	30.7
Total		**Count**	**47**	**67**	**114**
		% within Gender	**100**	**100**	**100**

Only 114 students chose to answer the question. Grade 12 Mathematics is divided into two subjects; the first being pure Mathematics and the second being Mathematics literacy. The latter subject is considered to be simpler in terms of course work. Students would have chosen either one of the two in high school as Mathematics is now compulsory. Students were asked to indicate whether they studied Mathematics or Mathematics literacy as one of them (or Accounting) is a requirement to get into the CMA programme at the DUT.

Table 5.6 indicates that male and female students choose mainly Mathematics (76.6% and 64.2%, respectively) when compared to the total population. When analysing the total responses, 69.3% of the 114 respondents had done Mathematics at grade 12 level.

Table 5.7 shows the students' percentage pass in Mathematics and their gender.

Table 5.7: Percentage pass in Mathematics and gender

			Gender		Total
			Male	Female	
Percent pass in Mathematics in grade 12	**30 - 40**	Count	4	1	5
		% within Gender	6.2	1.1	3.3
	41 - 50	Count	5	11	16
		% within Gender	7.7	12.5	10.5
	51 - 60	Count	13	33	46
		% within Gender	20	37.5	30.1
	61 - 70	Count	25	10	35
		% within Gender	38.5	11.4	22.9
	71 - 80	Count	12	29	41
		% within Gender	18.5	33	26.8
	81 - 100	Count	6	4	10
		% within Gender	9.2	4.5	6.5
Total		**Count**	**65**	**88**	**153**
		% within Gender	**100**	**100**	**100**

Table 5.7 shows that most students indicated that the pass which they achieved in high school for Mathematics was between the 51-60% range (46 students or 30.1%). This was followed by 41 respondents (26.8%) who indicated that they had obtained a pass in the 71-80% range. Thirty-five students (22.9%) had attained a pass between 61-70%. In the 71-80% category, there are more female students (29) than there are male (12). In the 81-100% category there are only ten students (6.5%); however, this is evenly divided between male and female respondents. Judging by the responses, most female students score higher marks than male students in grade 12 Mathematics.

5.3.7 English in grade 12

Table 5.8 presents the number of students who studied English home language or first additional language in grade 12.

Table 5.8: English home language or English first additional language in high school and gender

			Gender		Total
			Male	Female	
Grade 12	Home language	Count	36	67	103
		% within Gender	83.7	90.5	88
	First additional language	Count	7	7	14
		% within Gender	16.3	9.5	12
Total		**Count**	**43**	**74**	**117**
		% within Gender	**100**	**100**	**100**

Table 5.8 shows that out of the 117 respondents who answered this question, only 14 had done English first additional language at high school level. These 14 students were equally divided between male and female respondents. From the population, 103 (88%) had taken English home language. Usually, most students come into tertiary institutions having done English home language as it carries more points as it has a more difficult curriculum when compared to English first additional language. Most students, irrespective of their home language, choose to take the subject English home language when at high school. However, the results presented in this table are not to be confused with the results in Table 5.3 which indicated the home language of respondents. This

table simply indicates, irrespective of home language, the subject elected by respondents when they were in high school.

Table 5.9 shows the students' percentage pass rate achieved in grade 12 English according to gender.

Table 5.9: Percentage pass achieved in English and gender

			Gender		Total
			Male	Female	
Percent pass in English in grade 12grade 12	**30 - 40**	Count	1	1	2
		% within Gender	1.6	1.1	1.3
	41 - 50	Count	3	3	6
		% within Gender	4.7	3.3	3.9
	51 - 60	Count	8	48	56
		% within Gender	12.5	53.3	36.4
	61 - 70	Count	35	19	54
		% within Gender	54.7	21.1	35.1
	71 - 80	Count	15	16	31
		% within Gender	23.4	17.8	20.1
	81 - 100	Count	1	3	4
		% within Gender	1.6	3.3	2.6
	77.00	Count	1	0	1
		% within Gender	1.6	0.0	0.6
Total		**Count**	**64**	**90**	**154**
		% within Gender	**100**	**100**	**100**

Table 5.9 shows that most students did not score exceptional results (80%-100%) in grade 12 English. Fifty-six (36.4%) students achieved a pass in the 51-60% range in grade 12 English. This was closely followed by 54 (35.1%) students who had scored between 61-70%. Thirty-one (20.1%) students scored between 71-80%.

When further analysed according to gender, male students achieved higher percentages in grade 12 English as compared to female students in the 61-80% range (50 male students as compared to 35 female students) and more than half of the females (48 out of 90) scored in the 51-60% range.

5.3.8 Accounting in grade 12

Accounting is one of the requirements for entrance into the CMA programme. Table 5.10 examined the percentage pass achieved in grade 12 Accounting by male and female students. Only 149 students answered this question.

Table 5.10: Accounting at high school and gender

			Gender		Total
			Male	Female	
Percent pass in Accounting in grade 12grade 12	**41 - 50**	Count	3	3	6
		% within Gender	4.8	3.4	4
	51 - 60	Count	4	29	33
		% within Gender	6.5	33.3	22.1
	61 - 70	Count	32	36	68
		% within Gender	51.6	41.4	45.6
	71 - 80	Count	12	14	26
		% within Gender	19.4	16.1	17.4
	81 - 100	Count	11	5	16
		% within Gender	17.7	5.7	10.7
Total		**Count**	**62**	**87**	**149**
		% within Gender	**100**	**100**	**100**

Table 5.10 shows that 68 (45.6%) students achieved a pass of between 61-70% in grade 12 Accounting. This result was followed closely by the 51-60% category which had 33 (22.1%) students. When examining the results on a gender basis, it was found that both genders performed similarly.

5.3.9 Summary on background information

Section 5.3 summarised all the demographical data which were collected and analysed. The information in the tables was presented in terms of gender. There were more females than males in the population (90 females and 65 males). Most respondents belonged to the age category of 17 to 22 years. This meant that the population is predominantly traditional students. Thereafter, focus was placed on the home language (mother tongue) of the respondents. Only 47 students spoke English. The remaining 111 spoke other

South African languages. Considering that English is the language of communication at the DUT, the next section provides a further analysis on whether language is perceived as a barrier to performance. The section also identifies and presents information on grade 12 subjects, such as Mathematics, Accounting and English. In addition to being divided by gender, these were further analysed according to type of Mathematics and English.

The next section presents and discusses students' perceptions on the factors which may impact their performance in Cost Accounting two.

5.4 Analysis of the factors which affect performance

5.4.1 The respondents

Unfortunately, not every respondent answered every question in the questionnaire administered to them. As stated in Table 5.3, 158 questionnaires were analysed. Of the 158 responses collected, 67 were male and 91 were female. In addition, of the 158 respondents, 47 spoke English at home and 111 spoke other languages. The first factor on which the questionnaire focused was students' opinions on how they felt language influenced their academic achievements.

5.4.2 Respondents' level of agreement with statements made on language according to gender

The questionnaire presented the respondents with a number of statements (questions five to nine). Respondents' level of agreement with these statements are shown in Table 5.11. The responses are sorted according to gender.

Table 5.11: Respondents' level of agreement with statements on language according to gender

Statements	Male n = 67			Female n = 91			Total n = 158			Mann-Whitney U test	
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Z	P
5. Being taught in a different language makes understanding difficult for me.	3.22	3.00	1.25	2.26	2.00	1.00	2.68	2.00	1.21	-5.07	0.00***
6. I would prefer to be taught in my home language.	3.52	4.00	1.28	3.26	3.00	1.13	3.37	4.00	1.20	-1.76	0.08
7. If I am taught in my home language my understanding of Cost Accounting two would improve.	3.58	4.00	1.28	3.67	3.50	1.23	3.63	4.00	1.25	-0.34	0.74
8. If my understanding of the language I am being taught in improves my performance would also improve.	3.73	4.00	1.14	3.72	4.00	0.85	3.73	4.00	0.98	-0.53	0.59
9. I do not have a good understanding of the language I am being taught in at the institution.	2.66	3.00	1.20	1.79	1.00	1.18	2.16	2.00	1.26	-4.82	0.00***

Notes:
***Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.001 level

A Likert scale of 1 (strongly disagree) to 5 (strongly agree) was used.

Overall, Table 5.11 shows only some agreement with statements six, seven and eight with means of 3.37, 3.63 and 3.73 respectively. However, there was more support by male students for two of these statements (seven and eight) although the Mann-Whitney U test does not show a significant difference in the responses of the male and female

students. For this group of students, the language of instruction did not seem to pose difficulties for them.

Statements five and nine showed a significant difference in the responses between the male and female students ($p < 0.01$). This indicates that there is a significant statistical difference between male and female students in their responses to question five and nine. Female students were statistically significantly more in disagreement with statements five and nine than male students. This is shown with a median of two for statement five, by female students, whereas more male students indicated they had neutral feelings on statement five (median of three). Similarly, statement nine showed most female students indicated strong disagreement (median of one) whereas male students indicated they had neutral feelings on statement nine (median of three). Female students, thus, do not feel that the language of instruction provides any difficulties in their academic studies.

These findings concur with those of Jansen and De Villiers (2016), who conducted a similar study in South Africa with tertiary Accounting students. Jansen and De Villiers (2016) could not find a link between being taught in a second language and student performance. In opposition to the current significant responses in Table 5.11 above and the Jansen and De Villiers (2016) study, Brock-Utne (2007) found contradictory results. The Brock-Utne (2007) study found language of instruction caused disadvantages to students who spoke the language as a second language. It seems that the students in the current study may not have a problem with the way in which they articulate the English language. The next table (5.12) will present student responses to questions five to nine according to language.

5.4.3 Respondents' level of agreement with statements made on language according to home language spoken

Table 5.12 shows a further analysis of questions five to nine, sorted according to the home language of the students. Of the 158 respondents, 111 indicated their home language was not English.

Table 5.12: Respondents' level of agreement with statements according to language

Statements	English n = 47			Not English n = 111			Total n = 158			Mann-Whitney U test	
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Z	P
5. Being taught in a different language makes understanding difficult for me.	2.96	2.00	1.43	2.55	2.00	1.09	2.68	2.00	1.21	-1.41	0.16
6. I would prefer to be taught in my home language.	3.81	3.00	1.06	3.19	4.00	1.22	3.37	4.00	1.20	-2.58	0.01***
7. If I am taught in my home language, my understanding of Cost Accounting 2 would improve.	3.68	3.00	1.00	3.61	4.00	1.34	3.63	4.00	1.25	-0.08	0.93
8. If my understanding of the language I am being taught in improves, my performance would also improve.	3.62	3.00	1.07	3.77	4.00	0.94	3.73	4.00	0.98	-1.35	0.18
9. I do not have a good understanding of the language I am being taught in at the institution.	1.98	1.00	1.45	2.24	2.00	1.16	2.16	2.00	1.26	-2.05	0.04**

Notes:
***Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.001 level
A Likert scale of 1 (strongly disagree) to 5 (strongly agree) was used.

An overview of Table 5.12 above shows that English speaking students had neutral feelings towards statements six, seven and nine (median of three). However, non-English speaking students had mostly agreed with statements six, seven and nine (median of four shows more agreement). Non-English students indicated that they would prefer being taught in their home language. This finding aligns with statement seven, which shows that non-English students felt that their marks in Cost Accounting two would increase, should the language of instruction change to their home language. Furthermore, non-English speaking students mostly agreed (statement eight) that they would perform better if they understood the language of instruction better. Of the three statements discussed above, only statement six shows a statistically significant difference in the mean scores between

English and non-English speaking students. It is important to note that the mean values for English and non-English students are 3.81 and 3.19, respectively. Although more non-English speaking students agreed with statement six, it appears that some of their responses may have indicated strong disagreement/disagreement, thus causing a reduction of the mean value for the non-English speaking group. More English speaking students felt neutral and some agreement with statement six. The difference in levels of agreement is statistically significant at $p < 0.01$.

Table 5.12 also shows that students mostly disagreed with statements five and nine. Both English and non-English speaking students did not feel being taught in a different language made learning difficult. Most students chose to disagree, which is evident for both groups as indicated by a median of two. The mean value for statement five indicates that non-English speaking students disagreed more than English students. However, the statement did not find any statistically significant differences according to the Mann-Whitney U test. For statement nine, there were statistically significant differences in responses between English and non-English speaking groups. A median of one amongst English speaking students indicates a high level of strong disagreement to statement nine. Students felt that they did have a good understanding of the language of instruction. This is because the language of instruction at the DUT is English and these students speak English as a first language. The non-English speaking group disagreed less than the English speaking group, as indicated by their mean values of 2.24 and 1.98, respectively. The Mann-Whitney U test shows that there is a statistically significant difference in responses to statement nine between English and non-English speaking students ($p< 0.05$). Overall, it seems that students have a good understanding of the language of instruction at the DUT. However, being taught in their mother tongue/home language is preferred.

A study conducted by Rosenthal *et al.* (1983) found that the degree of articulation of the language of instruction does not influence performance in Mathematical subjects. In contrast, Rosenthal *et al.* (1983) also stated that the above finding might not apply to theoretical subjects. Students, who answered the questionnaire for the current study,

reflected on their understanding of Cost Accounting two in the language of instruction. Accounting, being predominantly mathematical in nature, may result in performance being unhindered by language. This, however, is in contradiction to a study by Brock-Utne (2007) who states that students who cannot articulate in the language of instruction are disadvantaged academically. It is clear from Tables 5.11 and 5.12 that Cost Accounting two students mostly indicated that language might not be a barrier to their academic achievement.

The next section will focus on students' responses relating to attendance at Cost Accounting two lectures.

5.4.4 Reasons for non-attendance at lectures

The next factor investigated was attendance at lectures. If students had indicated that they do miss lectures in question 10, they were then asked to indicate possible reasons (why they had missed lectures) in question 11.

Table 5.13 shows a list of reasons, which were provided in question 11 as to why students do not attend lectures or why they are unable to attend lectures. Students were asked to tick the reasons why they did not attend all the lectures every week. Not every student answered this question.

Table 5.13: Reasons why students do not attend all lectures

	Number of students who agreed	Rank
I am in full time employment, which is why I miss lectures.	2	5
I am in part time employment, which is why I miss some lectures.	27	3
I have timetable clashes, which is why I cannot attend every lecture.	33	2
I only miss lectures when I am not well.	45	1
I sometimes miss lectures because of transport issues, which are unavoidable.	45	1
I do not attend as often as I am supposed to because of other reasons.	14	4
Note: Students could tick more than one reason.		

Table 5.13 shows that most students who do miss lectures do so because of illness or logistical issues (transport). This is closely followed by 33 students who indicated that timetables have clashes which negatively impact on their Cost Accounting two attendance. Additionally, it was found that 27 students indicated that part time employment is another reason for being absent for Cost Accounting two lectures. Lastly, only 14 students stated that there are other unspecified reasons for non-attendance and a mere two students do not attend due to full time employment. Therefore, it is possible that statements ranked at levels four and five may not affect performance.

The following section presents and discusses respondents' level of agreement on how attendance influences their performance in Cost Accounting two by gender.

5.4.5 Attendance at lectures by Gender

Table 5.14 provides statements along with respondents' levels of agreement on the number of lectures attended for Cost Accounting two.

Table 5.14: Respondents' level of agreement on lecture attendance and gender

Statements	Male n = 66			Female n = 90			Total n = 156			Mann-Whitney U test	
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Z	P
13. I would attend all lectures if they are made compulsory.	4.03	5.00	1.23	4.18	5.00	1.16	4.12	5.00	1.19	-0.79	0.43
14. I would attend more lectures if a % of my DP depended on this.	4.04	5.00	1.30	4.55	5.00	0.83	4.34	5.00	1.08	-2.28	0.02**
15. Information communicated to me during lectures can be picked up from a text book.	3.79	4.00	0.83	3.22	4.00	0.97	3.46	4.00	0.95	-3.72	0.00***
16. I prefer self-study via blackboard rather than lectures.	2.13	2.00	1.01	2.40	2.00	1.08	2.28	2.00	1.06	-1.52	0.13
17. Information provided to me via blackboard positively impacts on my performance in Cost Accounting.	3.52	3.00	1.17	4.12	4.00	0.94	3.87	4.00	1.08	-3.41	0.00***

Notes:
***Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.001 level
A Likert scale of 1 (strongly disagree) to 5 (strongly agree) was used.

Table 5.14 above shows strong overall agreement with statements 13 and 14, as indicated by a median of five. Additionally, both male and female students displayed agreement with statement 15, presented by a median of four. Statement 16 shows that most students disagreed, as the median was two overall for both male and female students. Male students disagreed more than female students (mean values of 2.13 and 2.40, respectively) when asked if self-study via blackboard was preferred rather than lectures. Lastly, statement 17 shows male students feel neutral (median of three) whereas female students, with a median of four, agreed more. Of the five statements discussed, three statements show statistically significant differences in responses between male and female students. These statements were 14, 15 and 17.

Statement 14 indicates that female students felt more strongly about attendance improving if their DP depended on attendance. This finding is exposed by a mean value of 4.55 for female students who responded to statement 14. Male students also show agreement with statement 14, however, they agree less than female students at a mean value of 4.04. The difference in responses between male and female students is statistically significant at the $p < 0.05$ level. Although both male and female students have high levels of agreement with statement 14, female students agreed more.

Statement 15 shows both male and female students agree (median of four) that information provided during lectures can be picked up from textbooks. However, at a statistically significant $p < 0.01$ level, the Mann-Whitney U test indicates that male students agreed more (mean of 3.79), whereas female students agreed less, with a mean value of 3.22.

Statement 16 shows little difference in responses from male and female students. This finding is reflected by mean values for male and female students of 2.13 and 2.18, respectively. This indicates that students mostly disagreed with using blackboard as a replacement for lectures. However, the Mann-Whitney U test did not show any statistical significance of responses received for statement 16.

Statement 17 shows that, overall, students agreed (total median of four) that the online classroom (blackboard) positively affects their academic achievement in Cost Accounting two. However, female students agreed more with statement 17 whereas male students felt more neutral (median of three). The mean values for statement 17 for male and female responses (3.52 and 4.12, respectively) show females felt more in agreement. The differences in responses for statement 17 is statistically significant when tested using the Mann-Whitney U test at the level $p < 0.01$. This implies that mostly female students felt that blackboard positively impacts on their performance, whereas male students are uncertain about the statement.

Blerkom (2001; 487-494) found students who attended class more regularly when being rewarded with marks for their attendance, increased their academic achievement. Blerkom (2001) also found that students would attend more regularly if they were being tested weekly which would, in turn, contribute to their course mark. Judging by the responses received in Table 5.14 (statement 14) of the current study, incentivising attendance may perhaps improve student performance, as students in the current study felt incentives/policies would increase their attendance. On the other hand, Table 5.14 (statement 15) indicated that students felt that information, which is lectured to them in class, could be picked up from any Cost Accounting text book. In addition, Teixeira (2013: 11) states that enforcing compulsory attendance would increase pass rates. This would be attributed to students developing a richer understanding while being physically present, as compared to self-study. Teixeira's (2013) study could not confirm whether students preferred online classrooms to lecture contact time. However, it was found that students felt blackboard (online classrooms) is a useful tool in enhancing performance (Teixeira 2013). The Durden and Ellis (1995) study noted that the impact of having notes online would render contact hours optional to a student.

For the current study, it is clear that most students prefer lectures to self-study. However, students indicated that they felt textbooks and online classrooms aid in their academic achievement. The next table will present responses to questions 13 to 17 on attendance and language.

5.4.6 Attendance at lectures and language

Table 5.15 shows respondents' level of agreement on a number of statements (questions 13 to 17) on lecture attendance.

Table 5.15: Respondents' level of agreement on lecture attendance and language

Statements	English n = 47			Not English n = 111			Total n = 156			Mann-Whitney U test	
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Z	P
13. I would attend all lectures if they are made compulsory.	4.21	5.00	1.16	4.07	5.00	1.20	4.12	5.00	1.19	-0.84	0.40
14. I would attend more lectures if a % of my DP depended on this.	4.53	5.00	0.91	4.25	5.00	1.14	4.34	5.00	1.08	-1.49	0.14
15. Information communicated to me during lectures can be picked up from a text book.	2.81	3.00	1.06	3.75	4.00	0.75	3.46	4.00	0.95	-5.61	0.00***
16. I prefer self-study via blackboard rather than lectures.	2.83	3.00	1.26	2.05	2.00	0.87	2.28	2.00	1.06	-3.78	0.00***
17. Information provided to me via blackboard positively impacts on my performance in Cost Accounting.	3.89	4.00	0.79	3.85	4.00	1.19	3.87	4.00	1.08	-0.44	0.66

Notes:
***Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.001 level
A Likert scale of 1 (strongly disagree) to 5 (strongly agree) was used.

Table 5.15 shows that, overall, students mostly strongly agreed (median of five) with statements 13 and 14; and agreed (median of four) with statements 15 and 17. However, most students disagreed with statement 16 (indicated by a median of two). Students felt strongly that they would attend all lectures if attendance were made compulsory (statement 13). Furthermore, statement 13 had means of 4.21 and 4.07 for English and non-English speaking students, respectively. This finding indicates little difference in the level of agreement between the groups. In addition, students had strong feelings of agreement to statement 14 which was illustrated by mean values for English and non-English speaking students of 4.53 and 4.25, respectively. Responses to statement 14 shows that students would attend lectures more if their DP was dependent on attendance.

Even though English speaking students agreed more than non-English speaking students (variance of 0.28 between mean values), the difference in responses is slight. Statements 13 and 14 discussed in this paragraph did not produce any statistically significant differences in responses according to the Mann-Whitney U test.

Statement 15 shows that English speaking students had selected mostly neutral responses (median of three) to the statement: 'Information communicated to me during lectures can be picked up from a textbook'. Non-English speaking students show more agreement to statement 15 which is indicated by a median of four. This is further supported by mean values for English and non-English speaking students of 2.83 and 3.75, respectively. The Mann-Whitney U test shows a statistically significant difference in responses between English and non-English speaking respondents ($p<0.01$) for statement 15. English speaking students were not sure if information communicated during lectures could be picked up from a textbook instead.

Statement 16 shows English speaking students had frequently selected neutral responses to using blackboard and self-study as compared to attending lectures. Non-English speaking students showed mostly disagreement with statement 16. This meant that non-English speaking students preferred lectures rather than the online classroom and self-study. Furthermore, non-English speaking students disagreed more (mean value of 2.05), whereas English students disagreed less, which is shown with a higher mean value of 2.83. Statement 16 produced statistically significant differences in responses, which is indicated by the Mann-Whitney U test ($p<0.01$).

Lastly, statement 17 in Table 5.15 shows that English speaking students and non-English speaking students are in agreement (median of four). This is further evidenced by the mean values of 3.89 and 3.85, respectively. for English speaking and non-English speaking students for statement 17. However, the Mann-Whitney U test did not find any statistical significance in the responses received for statement 17 in Table 5.15.

The responses analysed above could not provide clarity on students' perceptions on attendance. Cost Accounting two CMA students seem to know the value of attendance and the impact thereof.

Johnson *et al.* (2002) and Clark and Latshaw (2012) also failed to find enough significant evidence to support the impact that attendance has on academic achievement. However, with regards to blackboard, the current study indicates that respondents felt attendance to be more important than relying on online methods of teaching and learning. This finding supports the finding of Young (2004) who explained that relying on technology alone for teaching and learning has a negative impact on performance.

The next section of this chapter investigates if age impacts on academic achievement. Age is divided into mature-aged students and traditional students.

5.4.7 Age and gender

Table 5.16 presents questions 18 to 25, which relate to age and are sorted according to gender.

Table 5.16: Respondents' views on effect of age on performance and gender

Statements	Male n = 58			Female n = 90			Total n = 148			Mann-Whitney U test	
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Z	P
18. I am a mature aged student.	4.00	4.00	0.00	4.00	4.00	0.00	4.00	4.00	0.00	0.00	1.00
19. I find it difficult to understand subject content because I am a mature aged student.	2.60	2.00	1.34	3.57	4.00	0.84	3.39	4.00	0.99	-1.75	0.08
20. It is very difficult to adjust to the teaching and learning process because I have been out of school for a longer period of time.	2.60	2.00	0.89	3.61	4.00	0.89	3.43	4.00	0.96	-2.24	0.03**
21. As a mature student, I am determined to perform well because I know how important an education is in the working world.	4.00	4.00	1.22	4.55	5.00	1.06	4.44	5.00	1.09	-1.67	0.10
22. I am a traditional student.	4.00	4.00	0.00	4.00	4.00	0.00	4.00	4.00	0.00	0.00	1.00
23. A traditional student finds it easier to understand subject content.	3.70	4.00	1.33	3.83	4.00	1.13	3.77	4.00	1.22	-0.33	0.75
24. Traditional students are more accustomed to the teaching and learning process.	3.72	4.00	1.35	3.89	4.00	1.12	3.81	4.00	1.23	-0.50	0.61
25. Traditional students are mature enough to know the importance of an education.	3.89	4.00	1.28	2.65	3.00	1.46	3.23	3.00	1.51	-4.62	0.00***

Notes:
***Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.001 level
A Likert scale of 1 (strongly disagree) to 5 (strongly agree) was used.

As indicated in chapter three, various categories of students are identified according to age in tertiary institutions. These are mature-aged students and traditional students. Mature-aged students are those students who have work experience and are older in age, these students usually do not meet entrance requirements the conventional way. Traditional (younger) students, on the other hand, are students who meet the entry criteria and would proceed to tertiary education directly after grade 12. An explanation of the above was provided in the questionnaire.

Table 5.16 shows the eight questions which were presented to the respondents. Of the 148 students who responded, 90 were female and 58 were male. Starting with question 18 and ending with question 25, the questions focused on either mature-aged or traditional students unambiguously. More specifically, if a student was a mature-aged student, he/she would agree with question 18. If the student were a traditional student, he/she would agree with question 22. Similarly, questions 18 to 21 were aimed at mature-aged students, whereas questions 22 to 25 were intended for traditional-aged students.

Overall, statements 18 to 21 focused on responses by mature-aged students. Statement 19 asked students if they felt their age impaired their ability to understand subject content. Male students disagreed whereas female students agreed. The differences in responses were not statistically significant according to the Mann-Whitney U test. Statement 20 asked students if the gap in their academic careers made it difficult to adjust to teaching and learning; male and female students provided opposing views with the statement.

Most male students disagreed with the statement; evidenced by a median of two. Contrarily, female students agreed with statement 19 (median of four). The mean values for male and female students in statement 19 indicate that more female students agreed (mean of 3.61) whereas most male students disagreed (mean of 2.60). There is a large discrepancy amongst responses between genders. The Mann-Whitney U test shows a statistically significant difference in responses to statement four with $p < 0.05$. This finding indicates that female students agreed that adjusting after an extended period is difficult. Male students do not feel the same. The final statement directed at mature-aged students

was statement 21. Overall, male and female students indicated that they are determined to perform well (medians of four and five, respectively). Furthermore, females agreed more with statement 21 as opposed to male students (means of 4.55 and 4.00, respectively). However, statement 21 did not produce a statistically significant result according to the Mann-Whitney U test.

Next, statements 22 to 25 were directed at traditional students. Overall, the medians (of 4.00) reveal that students agreed with most statements (22 to 24) and had neutral feelings concerning statement 25. Table 5.16 shows traditional students feel that understanding is easier for them (statement 23). Additionally, the mean values for male (3.70) and female (3.83) for statement 23 indicate that females agreed with this statement more than males. Furthermore, statement 24 asked traditional students if they were more accustomed to the teaching and learning process; agreement is shown for both male and female students (3.72 and 3.89, respectively). However, the Mann-Whitney U test did not find any significant differences in responses to statement 24. The final statement in Table 5.16 shows agreement by male students (mean of 3.89) whereas female students disagreed (mean value of 2.65). The difference in responses by male and female students is statistically significant at $p < 0.01$ level. This means that female students feel that they are not mature enough to understand the importance of education whereas male students feel that they are mature.

The current study found mature-aged students were of the opinion that learning is more complex due to being out of school for a long period. Although Richardson (1994) found that mature-aged students possess essential skills to succeed, the current study established that they find difficulty academically due to interruption of studies prior to entering tertiary education. However, it is important to note that this does not imply that they will not perform well academically. Determination and consistency are key elements of academic achievement regardless of external factors (Elger 2007; Campbell and Wiernik 2015).

Table 5.16 did not provide much insight when analysed according to gender, Table 5.17 which is presented below, will further analyse the same questions differently.

5.4.8 Age and language

Table 5.17 shows the results for questions 18 to 25, sorted according to language.

Table 5.17: Respondents' views on effect of age on performance and language

Statements	English n = 58			Not English n = 90			Total n = 148			Mann-Whitney U test	
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Z	P
18. I am a mature aged student.	4.00	4.00	0.00	4.00	4.00	0.00	4.00	4.00	0.00	0.00	1.00
19. I find it difficult to understand subject content because I am a mature aged student.	3.89	4.00	0.46	2.33	2.00	1.00	3.39	4.00	0.99	-3.67	0.00***
20. It is very difficult to adjust to the teaching and learning process because I have been out of school for a longer period of time.	3.95	4.00	0.52	2.33	2.00	0.71	3.43	4.00	0.96	-4.17	0.00***
21. As a mature student, I am determined to perform well because I know how important an education is in the working world.	4.83	5.00	0.71	3.67	4.00	1.32	4.44	5.00	1.09	-3.22	0.00***
22. I am a traditional student.	4.00	4.00	0.00	4.00	4.00	0.00	4.00	4.00	0.00	0.00	1.00
23. A traditional student finds it easier to understand subject content.	3.37	3.00	1.15	3.89	4.00	1.22	3.77	4.00	1.22	-2.12	0.03*
24. Traditional students are more accustomed to the teaching and learning process.	3.36	3.00	1.16	3.95	4.00	1.22	3.81	4.00	1.23	-2.43	0.02*
25. Traditional students are mature enough to know the importance of an education.	3.29	3.00	1.18	3.21	3.50	1.60	3.23	3.00	1.51	-0.09	0.93

Notes:
***Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.001 level

A Likert scale of 1 (strongly disagree) to 5 (strongly agree) was used.

Table 5.17 shows responses by mature-aged students (18 to 21) and traditional students (22 to 25). Firstly, statements 18 to 21 show that English speaking mature-aged students agreed with all statements (medians of four and five), whereas non-English speaking

students only agreed with statements 18 and 21 (medians of four). From these statements, which were addressed to mature-aged students, statement 19 found that English speaking students agreed (mean of 3.95) that being mature in age makes understanding difficult, while non-English speaking students disagreed (mean of 2.33) with the statement. The difference in responses to statement 19 is statistically significant at level $p < 0.01$. Therefore, mature-aged non-English speaking students do not feel that their age causes a hindrance to their understanding of subject content.

Statement 20 showed more English speaking mature-aged students agreed (median of four) with the statement whereas non-English speaking mature-aged students indicated disagreement (median of two). Mature-aged non-English speaking students indicated that the gap in their schooling does not seem to affect their adaptation to tertiary education (median of 2.33), as opposed to English speaking students who agreed that the gap in their schooling makes adaptation to tertiary education difficult (mean value of 3.95). The Mann-Whitney U test found a statistically significant difference (of $p < 0.01$) from the responses received for statement 20 from English speaking and non-English speaking students in Table 5.17. Lastly, mature-aged students were asked (in statement 21) if they are determined to perform well because they understand the importance of having an education. Overall, mature-aged students strongly agreed with statement 21 (median of five). However, English speaking students agreed more with a mean of 4.83, whereas non-English speaking students agreed less (mean if 3.67). The difference in responses shows statistical significance according to the Mann-Whitney U test ($p < 0.01$). This finding implies that, although most mature-aged students understand the importance of education, English speaking students felt more strongly when compared to the responses of non-English speaking students.

Statements 22 to 25 were aimed at traditional students. Traditional students agreed with statement 22, reflected by median and mean values of four overall. Statements 23 and 24 show overall agreement (median of four); however, English speaking students were more neutral (median of three) to statements 23 and 24, whereas non-English speaking students indicated more agreement (median of four). The difference in responses shows

significantly dissimilar means of 3.37 and 3.89, respectively. Statistical differences in responses received for statement 23 from English speaking and non-English speaking students are significant at $p < 0.01$. Traditional English speaking students were not certain if being traditional meant that they would find subject content easier to understand. However, non-English speaking students felt more agreement with statement 23. Traditional non-English speaking students felt being traditional students made understanding of subject content easier. Similarly, statement 24 show English speaking students again felt neutral, whereas non-English speaking students agreed more (indicated by medians of three and four, respectively). Further analyses show traditional English speaking students were not sure how they felt about being more accustomed to the teaching and learning process (mean value 3.36). However, non-English speaking students felt that, because they were traditional students, teaching and learning is habitual for them (mean value of 3.95).

Statement 24 shows significant differences in responses from English speaking and non-English speaking traditional students at level $p < 0.01$. Lastly, statement 25 shows that traditional students felt neutral towards knowing the importance of education. However, non-English speaking students agreed more with statement 25 (median of 3.5). The mean values for traditional English speaking and non-English speaking students (3.29 and 3.21, respectively) do not show much variation in responses to statement 25. Furthermore, the Mann-Whitney U test did not find significant differences in responses to statement 25.

Many authors have deliberated on the performance of mature-aged students, such as Richardson (1994), Richardson and King (1998), Richardson (2006) and McCune (2010). These studies found that mature-aged students performed well academically when compared to younger students. However, in contrast, Ballester (2010) could not find any significant variances between mature and traditional students. From the current study, mature-aged students were of the opinion that they are more driven and motivated to perform well due to life experiences. However, responses were varied amongst English speaking and non-English speaking students.

The results presented on student perceptions in Table 5.17 above are in line with results by Hoskins *et al.* (1997), Nyikahadzoi *et al.* (2013), Papageorgiou and Halabi (2014), and Jansen and De Villiers (2016). These studies found that traditional students perform better, which is attributed to age and the continuation of teaching and learning. However, it can be inferred from Table 5.17 that traditional students felt superior in performance when compared to mature-aged students.

5.4.9 Students' employment status as a percentage

Table 5.18 shows the employment status of 121 of the respondents.

Table 5.18: Employment status of students

Employment status	n	Percentage
Employed full time	1	0.66
Employed part time	3	1.99
Full time student	147	97.35
Total	**151**	**100**

From Table 5.18 above, only one student indicated full time employment. In addition, out of 158 respondents, six chose not to answer this question. Furthermore, Cost Accounting two is only offered full time to CMA students. Therefore, part time students are excluded.

The next section discusses the respondents' grade 12 results.

5.4.10 Percentages achieved In Mathematics, Accounting and English in Grade 12

Tables 5.19 and 5.20 show the number of respondents who had studied Accounting in conjunction with Mathematics/Mathematics literacy and English home language/ English first additional language in grade 12.

Table 5.19 displays a cross-tabulation of percentages achieved in grade 12 Accounting sorted according to Mathematics and Mathematics literacy in grade 12.

Table 5.19: Percentage achieved in Accounting with Mathematics and Mathematics literacy in grade 12

			Mathematics done in grade 12		Total
			Mathematics	Mathematics Literacy	
Percent pass in Accounting in grade 12	41 - 50	Count	1	2	3
		% within Percent pass in Accounting in grade 12	33.3	66.7	100
		% within Mathematics done in grade 12	1.3	5.7	2.7
		% of Total	0.9	1.8	2.7
	51 - 60	Count	6	18	24
		% within Percent pass in Accounting in grade 12	25	75	100
		% within Mathematics done in grade 12	8	51.4	21.8
		% of Total	5.5	16.4	21.8
	61 - 70	Count	49	6	55
		% within Percent pass in Accounting in grade 12	89.1	10.9	100
		% within Mathematics done in grade 12	65.3	17.1	50
		% of Total	44.5	5.5	50
	71 - 80	Count	12	6	18
		% within Percent pass in Accounting in grade 12	66.7	33.3	100
		% within Mathematics done in grade 12	16	17.1	16.4
		% of Total	10.9	5.5	16.4
	81 - 100	Count	7	3	10
		% within Percent pass in Accounting in grade 12	70	30.0	100
		% within Mathematics done in grade 12	9.3	8.6	9.1
		% of Total	6.4	2.7	9.1
Total		Count	75	35	110
		% within Percent pass in Accounting in grade 12	68.2	31.8	100
		% within Mathematics done in grade 12	100	100	100
		% of Total	68.2	31.8	100

From Table 5.19, it can be seen that only 110 students answered the question. The reason for leaving this question unanswered could be due to students not wanting to disclose this information, or students could not remember their exact percentage which they had achieved.

Table 5.19 shows that most students, who had done Mathematics at grade 12, obtained an average of 61-70% in Accounting. Those students who had done Mathematics literacy in grade 12 had achieved an average pass of between 51-60% in grade 12 Accounting. As stated earlier, Mathematics literacy is a much simpler subject in terms of curriculum, as compared to Mathematics.

Similar to Table 5.19, Table 5.20 is a cross-tabulation between grade 12 English (Home language and first additional language) and grade 12 Accounting.

Table 5.20: Percentage achieved in grade 12 Accounting with English home language and first additional language

			English done in grade 12		Total
			Home language	First additional language	
Percent pass in Accounting in grade 12	41 - 50	Count	3	0	3
		% within Percent pass in Accounting in grade 12	100	0	100
		% within English done in grade 12	3	0	2.7
		% of Total	2.7	0	2.7
	51 - 60	Count	26	3	29
		% within Percent pass in Accounting in grade 12	89.7	10.3	100
		% within English done in grade 12	26	23.1	25.7
		% of Total	23	2.7	25.7
	61 - 70	Count	51	3	54
		% within Percent pass in Accounting in grade 12	94.4	5.6	100
		% within English done in grade 12	51	23.1	47.8
		% of Total	45.1	2.7	47.8
	71 - 80	Count	12	5	17
		% within Percent pass in Accounting in grade 12	70.6	29.4	100
		% within English done in grade 12	12	38.5	15
		% of Total	10.6	4.4	15
	81 - 100	Count	8	2	10
		% within Percent pass in Accounting in grade 12	80	20	100
		% within English done in grade 12	8.0	15.4	8.8
		% of Total	7.1	1.8	8.8
Total		Count	100	13	113
		% within Percent pass in Accounting in grade 12	88.5	11.5	100
		% within English done in grade 12	100	100	100
		% of Total	88.5	11.5	100

Table 5.20 shows that, out of 158 students who responded to the questionnaire, only 113 answered the question. Overall, 13 students studied English first additional language and 100 students indicated that they studied English home language. English first additional

language would have a simpler curriculum than English home language. In addition, 51 students who took English home language in grade 12 had obtained pass rates of between 61-70% in grade 12 Accounting. Five out of the 13 students, who had taken English first additional language, obtained pass rates of between 71-80% in grade 12 Accounting.

Table 5.21 shows students' opinions on whether identified grade 12 subjects have an influence on their performance sorted by gender.

Table 5.21: The impact of grade 12 subjects on performance according to gender

Statements	Male n = 64			Female n = 90			Total n = 154			Mann-Whitney U test	
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Z	P
31. My pass in Mathematics at grade 12 level has impacted positively on my understanding of Cost Accounting two.	3.59	4.00	1.03	3.57	4.00	0.87	3.58	4.00	0.94	-0.51	0.61
32. My pass in Accounting at grade 12 level has impacted positively on my understanding of Cost Accounting two.	3.91	4.00	0.90	3.89	4.00	0.88	3.90	4.00	0.88	-0.11	0.92
33. My pass in English at grade 12 level has impacted positively on my understanding of Cost Accounting two.	3.78	4.00	0.98	3.90	4.00	0.69	3.85	4.00	0.82	-0.40	0.69
34. I feel the need to work harder than I did to pass grade 12.	4.12	5.00	1.10	4.13	4.00	0.89	4.13	4.00	0.98	-0.43	0.67
35. Tertiary examinations are more difficult than the grade 12 final exams.	3.92	4.00	1.24	3.66	4.00	1.27	3.77	4.00	1.26	-1.29	0.20
36. Although I did not perform as well as others in grade 12, I have ensured that I perform exceptionally at DUT.	3.95	4.00	1.19	3.76	4.00	0.77	3.84	4.00	0.97	-2.22	0.03**
37. My performance has been constant from grade 12 up until my second year at the DUT.	3.18	3.00	1.12	2.92	3.00	0.96	3.03	3.00	1.03	-1.88	0.06

Notes:
***Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.001 level
A Likert scale of 1 (strongly disagree) to 5 (strongly agree) was used.

Table 5.21 shows overall agreement with statements 31 to 36 with medians of four. Agreement is reflected by mean values, which range from 3.58 to 4.13. Only statement 37 indicated mostly neutral responses by students (median of three). However, from the seven statements discussed above, only one (statement 36) showed a statistically significant difference in responses. Statement 31 found similar levels of agreement between male and female students, represented by means of 3.59 and 3.57, respectively. Students felt their Mathematics pass has a positive impact on their Cost Accounting two performance. Statement 32 asked male and female students if they felt grade 12 Accounting positively affected their Cost Accounting two performance. Both male and female students mostly agreed with statement 32 (represented by mean values of 3.91 and 3.89, respectively).

Similar to the previous statements, statement 33 shows agreement amongst male and female students. Students felt grade 12 English also has a positive impact on their Cost Accounting two performance. Females agreed slightly more than males (means of 3.90 and 3.78, respectively. Statement 34 shows that most students (male and female) agreed that more effort is needed to pass, as compared to grade 12 (mean values of 4.12 and 4.13, respectively). Statement 35 shows male and female students mostly agreed that tertiary examinations are more difficult than grade 12 final examinations. However, male students indicated more agreement than female students (mean values of 3.92 and 3.66, respectively). Although male and female students showed similar levels of agreement for statements 31, 32, 33, 34 and 35, none of the responses to the above statements was statistically significant (Mann-Whitney U test).

Statement 36 asked students if they are determined to perform better than they did at high school. Median values of four, for male and female students, indicate both groups agreed with statement 36. Furthermore, male students felt more agreement (mean value of 3.95) as compared to female students (mean value of 3.76). The difference shown in responses to statement 36 is statistically significant according to the Mann-Whitney U test ($p < 0.05$). This finding indicates that male students felt more strongly about improving their performance. Lastly, statement 37 found students were neutral (median of three)

and did not indicate if they agreed or disagreed with having consistent performance. More females disagreed when comparing mean values of male and female students in statement 37 (3.18 and 2.92, respectively). Statement 37 did not show any significance according to the Mann-Whitney U test.

The current study indicates that students felt determined to achieve academic excellence when entering tertiary education. Studies conducted relating to the impact of high school results on university performance provided various findings. The results of the current study are in line with the studies of Marks (2010) and Du Plessis *et al.* (2005). The Marks (2010) study indicates students who achieve a certain grade in high school are most likely able to continue achieving similar results at tertiary level as well. In addition, Evans (2000) found grade 12 success to be a predictor for achievement at university. However, Evans finding disagrees with the findings of Bitzer and Troskie-De Bruin (2004) which found that students have difficulty transitioning into tertiary education from high school.

Table 5.22 provides an analysis of questions 31 to 37 sorted according to home language.

Table 5.22: The impact of grade 12 subjects on according to language

Statements	English n = 47			Not English n = 107			Total n = 154			Mann-Whitney U test	
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Z	P
31. My pass in Mathematics at grade 12 level has impacted positively on my understanding of Cost Accounting two.	3.53	4.00	1.00	3.60	4.00	0.92	3.58	4.00	0.94	-0.39	0.70
32. My pass in Accounting at grade 12 level has impacted positively on my understanding of Cost Accounting two.	3.79	4.00	0.98	3.94	4.00	0.84	3.90	4.00	0.88	-0.98	0.33
33. My pass in English at grade 12 level has impacted positively on my understanding of Cost Accounting two.	3.87	4.00	0.80	3.84	4.00	0.83	3.85	4.00	0.82	-0.07	0.95
34. I feel the need to work harder than I did to pass grade 12.	4.38	5.00	0.90	4.02	4.00	1.00	4.13	4.00	0.98	-2.26	0.02*
35. Tertiary examinations are more difficult than the grade 12 final exams.	4.24	5.00	1.10	3.57	4.00	1.28	3.77	4.00	1.26	-3.10	0.00***
36. Although I did not perform as well as others in grade 12, I have ensured that I perform exceptionally at DUT.	3.57	3.00	0.91	3.95	4.00	0.97	3.84	4.00	0.97	-2.93	0.00***
37. My performance has been constant from grade 12 up until my second year at the Durban University of Technology.	2.98	3.00	1.13	3.06	3.00	0.99	3.03	3.00	1.03	-0.73	0.47

Notes:
***Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.001 level
A Likert scale of 1 (strongly disagree) to 5 (strongly agree) was used.

Table 5.22, like Table 5.21, shows overall agreement with statements 31, 32 and 33. A median of four shows that most students agreed. Furthermore, statement 32 shows that English speaking students felt more neutral than non-English speaking students (mean values of 3.79 and 3.94, respectively. This finding indicates that non-English speaking students agreed that grade 12 Accounting positively influenced their performance in Cost Accounting two. Statements 31 and 33 show close mean values between English speaking and non-English speaking students (3.53 and 3.60; 3.87 and 3.84). However, the Mann-Whitney U test does not show any statistically significant differences in responses to statements 31, 32 and 33.

Statements 34, 35 and 36 show mean values of 4.13, 3.77 and 3.84, respectively. The mean values indicate that more students strongly agreed with statement 34 as compared to statements 35 and 36. Statement 34 shows more English speaking students agreed strongly as compared to non-English speaking students (mean values of 4.38 and 4.02, respectively). Statement 34 shows a significant difference ($p < 0.01$) in responses between English speaking and non-English speaking students. This finding indicates that there is a significant statistical difference in responses to statement 34, which means that English speaking students feel strongly that they need to work harder than they did in high school in order to pass.

Similarly, statement 35 shows that most English speaking students strongly agreed that tertiary examinations are difficult when compared to grade 12 final examinations. Non-English speaking students indicated much less agreement to statement 35. The difference in responses is evident with a mean of 4.24 for English speaking students and 3.57 for non-English speaking students. The variance in answers, to statement 35, between English speaking and non-English speaking students is significant according to the Mann-Whitney U test at $p < 0.01$ level. It is evident that non-English speaking students may not feel tertiary examinations are more difficult than grade 12 final examinations. Responses to statement 36 show that English speaking students were more neutral with a median of 3 and 3.57, respectively. However, non-English speaking students agreed more (3.95) with statement 36. The difference in responses between English speaking and non-English speaking students was significant ($p < 0.01$) according to the Mann-Whitney U test. This finding shows that non-English speaking students feel they are more determined to perform better than they had in grade 12.

Lastly, statement 37 shows that students had neutral feelings (medians of 3 and 3.03, respectively). However, English speaking students disagreed more (mean of 2.96). English students did not feel that their performance was consistent (from grade 12 to current), whereas non-English speaking students responded impartially. However, the Mann-Whitney U test did not find any statistically significant differences in responses between English speaking and non-English speaking students.

Bitzer and Troskie-De Bruin (2004) identified the transition from high school into tertiary education to be one of the factors which negatively affects student performance. Similarly, the current study found students shared views which were closely related to the study of Bitzer and Troskie-De Bruin (2004). Respondents were of the opinion that the process of adapting to university after high school is difficult.

However, Du Plessis *et al.* (2005) and Evans (2000) pointed out that grade 12 achievement has a direct relationship on a student's ability to succeed at university. Students who were high achievers at high school tend to transition well into tertiary education and students who struggled in high school may have difficulty transitioning.

5.4.11 High school attended

Question 30 had asked: "which high school did you attend?" This was an open-ended question because listing all the high schools in South Africa would have been impossible in the questionnaire. There were 82 different high schools identified by students. For each high school specified, there was a minimum of one and a maximum of two students studying CMA at the DUT. Out of the schools listed, eight schools were recognised as private schools. The rest were government schools. Therefore, majority of the students attended government schools before entering tertiary education. No further analysis was performed using the schools attended by the students. This is a limitation of the study and an area for further research.

5.4.12 Students' views on what impacts on their performance according to gender

Tables 5.23 and 5.24 present statements that relate to each of the five independent variables. Students expressed their views on the impact of the respective factors on their performance in Cost Accounting two. The findings are presented and analysed according to language and gender. The findings from these statements are also used to test the hypotheses in the following section.

Table 5.23 analysed questions 38 to 42 according to gender.

Table 5.23: Respondents' views on what may improve their Cost Accounting two performance and gender

Statements	Male n = 62			Female n = 84			Total n = 146			Mann-Whitney U test	
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Z	P
38. My attendance at Cost Accounting 2 lectures results in good performance.	3.98	4.00	0.86	4.21	4.00	0.73	4.12	4.00	0.79	-1.60	0.11
39. My age positively impacts on my performance.	3.69	4.00	1.33	3.08	3.00	0.97	3.34	3.50	1.17	-3.41	0.00***
40. Female students outperform male students in Cost Accounting two.	2.26	2.00	0.90	3.80	4.00	1.05	3.14	3.00	1.25	-7.42	0.00***
41. Having achieved good results in grade 12 has resulted in a better understanding of Cost Accounting two.	3.58	3.00	0.92	3.26	3.00	0.68	3.40	3.00	0.80	-2.32	0.02**
42. My home language does not affect my performance negatively.	3.69	4.00	1.06	3.81	4.00	0.74	3.76	4.00	0.89	-0.71	0.48

Notes:
***Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.001 level
A Likert scale of 1 (strongly disagree) to 5 (strongly agree) was used.

Above, all five statements link to each of the following that were examined:

- Statement 38: Attendance;
- Statement 39: Age;
- Statement 40: Gender;
- Statement 41: Grade 12; and
- Statement 42: Language.

A total of 146 students answered the statements listed above. This total comprised of 62 females and 84 males.

Table 5.23 shows overall agreement with statements 38 and 42 (median of four). For statement 38, female students agreed more (mean of 4.21), whereas male students agreed less (mean of 3.98). More female students believe attendance positively impacts on their performance in Cost Accounting two. Similarly, statement 42 shows some overall agreement. Again, female students agreed more (mean of 3.81) than male students

(mean of 3.69). Students do not feel that language impacts on their performance negatively. However, in the Mann-Whitney U test, statements 38 and 42 did not show any significant differences in responses.

Overall, statement 39 showed some agreement with a median of 3.5, whereas statements 39 and 40 showed mostly neutral responses (overall median of three). Statement 39 showed females felt more neutral (mean of 3.08) on age having a positive impact on their performance. Male students showed some agreement with statement 39, which is indicated by a mean value of 3.69. The Mann-Whitney U test shows a statistically significant difference between responses from male and female students ($p < 0.01$). Male students agreed more that age positively impacts on their performance when compared to female students.

Statement 40 asked male and female students if they felt that females outperform males in Cost Accounting two. As expected, males disagreed with a mean value of 2.26. Females showed agreement with a mean value of 3.8. Females were of the opinion that they do outperform males in Cost Accounting two. The difference in responses is statistically significant at $p < 0.01$. The medians of male and female responses to statement 40 (two and four, respectively) show the difference in opinions between genders.

Statement 41 shows that male and female students were mostly neutral with their responses (median of three). However, male students showed some agreement (mean of 3.58) whereas female students were more neutral (mean of 3.26). The Mann-Whitney U test shows a statistically significant difference in responses of $p < 0.01$ between male and female students. Some male students felt grade 12 results have an influence on performance in Cost Accounting two.

Studies identified in the literature of the current study (chapter three) supported some of the significant responses identified in Table 5.23. Ballester (2010) found no significant difference in performance, between mature- and traditional-aged students, when age was

considered. Borg and Stranahan (2002a) as well as Marks (2008; 2010) found that female students often outperform male students. Nyikahadzoi *et al.* (2013) found that male students outperform female students. However, it is important to note that Durden and Ellis (1995) and Papageorgiou and Halabi (2014) did not find any significant differences between performance and gender. Evans (2000), Du Plessis *et al.* (2005), Marks (2010), Stainbank (2013), and Papageorgiou and Halabi (2014) found that grade 12 pass rates are a strong predictor of tertiary academic success.

To refine the findings on student perceptions of the statements presented in Table 5.23, the next table analyses the responses according to home language instead of gender.

Table 5.24 analyses statements 38 to 42 according to respondents' home language.

Table 5.24: Respondents' views on what may improve their Cost Accounting two performance and language

Statements	English n = 46			Not English n = 100			Total n = 146			Mann-Whitney U test	
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Z	P
38. My attendance at Cost Accounting two lectures results in good performance.	4.46	5.00	0.86	3.96	4.00	0.71	4.12	4.00	0.79	-4.43	0.00***
39. My age positively impacts on my performance.	2.83	3.00	1.06	3.58	4.00	1.15	3.34	3.50	1.17	-3.79	0.00***
40. Female students outperform male students in Cost Accounting two.	3.46	4.00	1.00	3.00	3.00	1.33	3.14	3.00	1.25	-2.37	0.02**
41. Having achieved good results in grade 12 has resulted in a better understanding of Cost Accounting two.	3.28	3.00	0.66	3.45	3.00	0.86	3.40	3.00	0.80	-1.41	0.16
42. My home language does not affect my performance negatively.	3.87	4.00	0.78	3.71	4.00	0.94	3.76	4.00	0.89	-0.91	0.37

Notes:
***Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.001 level
A Likert scale of 1 (strongly disagree) to 5 (strongly agree) was used.

Table 5.24, when analysed according to language, shows similar levels of agreement as Table 5.23. Statements 38 and 42 show mostly overall agreement with medians of four and mean values of 4.12 and 3.76, respectively, whereas statement 39 shows only some

agreement with a median of 3.5 and a mean value of 3.34 overall. Statements 40 and 41 show that students were mostly neutral in their response (medians of three; mean values of 3.14 and 3.40, respectively). Statement 41 shows little difference in responses from English speaking and non-English speaking students (means of 3.28 and 3.45, respectively). Students were not sure if grade 12 results influenced their Cost Accounting two performance. Statement 42 also shows a slight variance in responses. Both English speaking and non-English speaking students were in agreement that home language does not have a negative impact on their performance. English speaking students agreed slightly more than non-English speaking students (means of 3.87 and 3.71, respectively). However, the Mann-Whitney U test does not show any statistically significant difference between responses from English speaking and non-English speaking students.

Statement 38 shows English speaking students strongly agreed (median of five) that attendance positively influences their performance. Non-English speaking students also agreed with statement 38 (median of four; mean of 3.96). However, English speaking students agreed more and showed a higher level of agreement (mean of 4.46). The difference in responses is statistically significant ($p < 0.01$). This finding shows that, although both groups are in agreement with attendance positively impacting on performance, English speaking students agreed significantly more than non-English speaking students.

Statement 39 shows English speaking students' responses were mostly neutral (median of three) whereas non-English speaking students show some agreement (median 4.0). However, the mean value for English speaking students show more disagreement (2.83), whereas non-English speaking students show some agreement (3.58). Furthermore, responses for statement 39 show statistically significant differences in responses from both groups ($p < 0.01$), indicating that English speaking students do not feel that their age positively impacts on their performance, whereas some non-English speaking students felt otherwise.

Statement 40 found English speaking students mostly agreed (median of four), whereas non-English speaking students felt more neutral (median of three). English speaking

students indicated some agreement as compared to non-English speaking students. This finding is shown by mean values of 3.46 and 3.00, respectively. The Mann-Whitney U test shows a statistically significant difference in responses of $p < 0.05$ between the two groups, indicating that mostly English speaking students felt females outperform males in Cost Accounting two.

Traphagan *et al.* (2009), Dobkin *et al.* (2010), Cortright *et al.* (2011), Schmulian and Coetzee (2011), Teixeira (2013) and Alanzi (2015) all found that performance is improved through attendance. However, Clark and Latshaw (2012) could not find a significant relationship between class attendance and student performance.

5.4.13 Students' responses to a proposed solution

Students were provided with a scenario and then asked whether or not they agreed or disagreed with each statement based on the scenario presented.

The scenario presented to the students read: *"The Department of Management Accounting has decided to implement a new system of assessment. This method will involve unscheduled tests, which will take place once every two weeks, these assessments will form a part of your DP, which will determine whether you will be permitted to write test 1 or test 2". "What are your views on the scenario?"*

Students' responses, sorted according to gender, are presented in Table 5.25 (Questions 44 to 49).

Table 5.25: Respondents' views on the proposal provided to improve attendance at lectures which may improve performance according to gender

Statements	Male n = 62			Female n = 85			Total n = 147			Mann-Whitney U test	
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Z	P
44. My attendance will improve.	4.13	4.50	1.12	4.48	5.00	0.88	4.33	5.00	1.00	-2.14	0.03**
45. I attend most lectures presently.	4.37	5.00	0.85	4.60	5.00	0.71	4.51	5.00	0.78	-2.09	0.04**
46. I will attend lectures every day in the above scenario.	4.21	5.00	1.03	4.63	5.00	0.67	4.45	5.00	0.86	-2.78	0.01***
47. I find the above scenario realistic.	3.81	4.00	1.25	4.07	5.00	1.29	3.96	5.00	1.28	-1.51	0.13
48. I find that the above scenario would help us prepare better for tests and exams.	4.16	4.00	1.07	4.57	5.00	0.83	4.40	5.00	0.96	-2.92	0.00***
49. It is an excellent idea.	3.85	5.00	1.46	4.25	5.00	1.25	4.08	5.00	1.35	-1.89	0.06

Notes:
***Significant at the 0.01 level
** Significant at the 0.05 level
* Significant at the 0.001 level

A Likert scale of 1 (strongly disagree) to 5 (strongly agree) was used.

Table 5.25, presented above, tested students' opinions on being tested randomly in order to obtain a DP. The scenario was developed with the following assumptions:

- Random testing may increase performance;
- Random testing ensures reliable attendance;
- Random testing provides a measure of performance before a student is exposed to the major assessments (final examinations); and
- Random testing increases student effort and consistency.

Table 5.25 shows an overall strong agreement with a median of five. However, statement 47 shows the least overall agreement, as indicated by a mean value of 3.96, which happens to be the lowest overall mean from the six statements.

Statement 44 shows that both male and female students mostly strongly agreed that, in the aforementioned scenario, their attendance would improve. Male students agreed less than female students, which is evident by a mean value of 4.13, whereas female students agreed more, shown by a mean value of 4.48. The difference in the responses between male and female students is statistically significant according to the Mann-Whitney U test ($p < 0.05$), which signifies that females feel more strongly about attendance in the given scenario.

Statement 45 found that both male and female students mostly indicated that they currently attend most lectures (medians of 5.0). However, the mean values for male and female students (4.37 and 4.60, respectively) show that female students strongly agreed more, whereas male students showed some strong agreement with statement 45. The responses received are statistically significant at $p < 0.05$. This finding shows that, although both genders agreed with having consistent attendance, females agreed significantly more than male students.

Statement 46 shows strong agreement with medians of five for both male and female students. Male students show less agreement with a mean value of 4.21. However, female students show more agreement with a mean value of 4.63, indicating that females felt more strongly about attending lectures everyday if their DP was reliant upon attendance. Statement 46 shows a significant difference in responses of $p < 0.01$.

Statement 48 shows that males agreed (median of 4.0), whereas females strongly agreed (median of 5.0) that the aforementioned scenario will assist with future assessments. The difference in responses between male and female students shows statistical significance at $p < 0.01$. The mean values shown for male and female students (4.16 and 4.57, respectively) indicate that, although both groups agreed with statement 48, female students felt more strongly than male students.

Although statements 47 and 49 showed overall agreement, it is evident that females agreed more with the scenario as compared to male students. This is shown with a

difference in mean values for male and female students in statements 47 (means of 3.81 and 4.07, respectively) and 49 (means of 3.85 and 4.25, respectively). However, the Mann-Whitney U test could not find any significant differences in responses to statements 47 and 49.

The next section will discuss an open-ended question on students' perceptions of what may influence their performance in Cost Accounting two.

5.4.14 Students' perceptions on what affects their performance

Question 50 was an open-ended question in which students were asked to indicate which three factors they believed affected their performance in Cost Accounting two. The responses were categorised according to similarity. These results are shown below in Table 5.26.

Table 5.26: Factors which students listed that affect their performance			
Factors	**Number**	**Percentage**	**Rank**
Blackboard was a positive impact	8	4.7	11
Age had a negative impact	13	7.7	7
Poor attendance at lectures	23	13.5	1
Time table clashes, distance of venues and scheduled times of lectures impact negatively	14	8.2	6
Lecturer was a negative impact	18	10.6	3
Communication between institution and student was a negative impact	5	2.9	12
Financial difficulty	9	5.3	10
Insufficient content and course work	11	6.5	9
High standards of assessments impact negatively	15	8.8	5
Language barrier	16	9.4	4
No scope for assessments	5	2.9	12
Poor time management	12	7.1	8
Other external factors which negatively impacted on performance	21	12.4	2
TOTAL	**170**	**100**	

Table 5.26 shows that students felt attendance at lectures would have an impact on how they perform. Twenty-three answers (13.5%) of the 170 reasons provided by the students indicated that attendance was important to achieve good results, followed closely by 21 responses indicating that there are other factors which affect their performance. Some of the factors were: lecturers not coming to lectures on time, lots of content, no tutorials, not having a textbook, pace is too fast, tests are tricky and transport.

In addition, students also indicated timetabling, difficult assessment standards and the language barrier have a negative impact on their performance. Lastly, students are of the opinion that the lecturer allocated to them was the reason for them performing less than desirable. The next section summarises the findings discussed thus far.

5.4.15 Summarising student perceptions on factors which affect their performance

Section 5.4 analysed students' responses to questions five to 52. Most were Likert scale type questions and were analysed according to gender and language. An analysis using the Mann-Whitney U test was performed. This type of testing was used to find possible significant differences in responses between groups. The most notable findings from the current section are discussed next.

Tables 5.11 and 5.12 showed that most students did not feel that the language of instruction affected their performance. However, female students and English speaking students felt more strongly. In addition, Table 5.12 showed that more non-English speaking students prefer being taught in their first language. Table 5.13 showed students mostly miss lectures because of illness, transport issues and timetable clashes. Thereafter, Table 5.14 and 5.15 presented statements on attendance.

Tables 5.14 and 5.15 showed most students agreed that they would attend more lectures if a portion of their course mark depended on their attendance. Furthermore, most students felt information communicated during lectures could be picked up from a textbook. However, English speaking students did not agree. Non-English speaking students indicated that they prefer lectures to self-study via blackboard. Lastly, Table 5.14 showed that female students felt blackboard positively influenced their performance. Thereafter, Tables 5.16 and 5.17 showed respondents' views on how age affects their performance.

Mature-aged female students and mature-aged English speaking students were in agreement with statement 20. Both groups felt adjusting to being a student, after a long period has passed, is difficult. Mature-aged English speaking students indicated that subject content is difficult to understand (statement 19), but they are determined to perform well (statement 21), irrespective. Mature-aged non-English speaking students showed little agreement with statement 21. Table 5.16 showed that male traditional students felt they are mature enough to understand the importance of being educated. However, female students did not agree. Table 5.17 showed, overall, that traditional

students felt learning was easier because they are traditional students (statement 23). Traditional students also felt they are more accustomed to being scholars but non-English speaking students showed more agreement than English speaking students (statement 24).

Thereafter, Table 5.18 showed 147 students were full time students, whereas four were employed. Table 5.19 showed students, who took mathematics in grade 12, achieved 61-70% in grade 12 Accounting, whereas those students who took Mathematics literacy achieved 51-60% in grade 12 Accounting. Similarly, Table 5.20 showed that those students who took English home language scored mostly between 61-70% in grade 12 Accounting.

Tables 5.21 and 5.22 looked at students' responses to statements made on the impact of the identified grade 12 subjects on their performance in Cost Accounting two. Although most students agreed that grade 12 Mathematics, Accounting and English had a positive impact on their Cost Accounting two performance, the Mann-Whitney U test did not find any statistical significance. However, students agreed that they would need to work harder than they had in high school (statement 34) because most students felt tertiary examinations are more difficult than grade 12 examinations (statement 35). Thereafter, Tables 5.23 and 5.24 analysed students' views on statements that may influence their performance.

Each of the five statements was guided by an independent variable. Students' responses showed attendance at lectures positively influences performance. In addition, male students indicated that age positively influences their performance, whereas English students showed more disagreement. Tables 5.23 and 5.24 also showed that female students felt that they perform better in Cost Accounting two than male students (statement 40). English students also showed some agreement to the aforementioned statement. Lastly, Table 5.23 showed that some male students felt their grade 12 performance aided in their understanding of Cost Accounting two.

Finally, the section concluded with Tables 5.25 and 5.26. Table 5.25 provided statements related to a proposed solution to improve attendance and performance. Most students indicated that their attendance would improve in the scenario provided. Students also indicated that the proposed solution would assist with their preparations for tests and examinations. Table 5.26 showed various factors which students felt negatively influenced their performance. Attendance was evidently the highest-ranking factor identified by students. The next section discusses the hypotheses and how they will be tested.

5.5 Testing of the hypotheses

The next section examines which of the five factors impact on the academic achievement of Cost Accounting two students. The hypotheses to be tested are:

Hypotheses one (H^1) - Attendance

There is a positive relationship between student attendance and student performance.

Hypotheses two (H^2) - Age

There is no difference between students' performance and age.

Hypotheses three (H^3) - Gender

Female students perform better than male students.

Hypotheses four (H^4) - Grade 12 results

An above 60% pass in Mathematics, English and Accounting in grade 12 would result in a student performing better in Cost Accounting two at tertiary level.

Hypotheses five (H^5) - Language

Students who speak English as their home language will perform better than those who do not.

5.5.1 Correlation matrix

In order to test the relationships between variables, a correlation was performed between the dependent (performance) and independent (attendance, age, gender, grade 12 results and language) variables. Responses to question one and statements 38 to 42 were used. Table 5.27 shows a correlation matrix between variables.

Table 5.27: Correlation matrix

	Percentage (i.e. performance)	My attendance at Cost Accounting 2 lectures results in good performance	My age positively impacts on my performance	Female students outperform male students in Cost Accounting 2	Having achieved good results in grade 12 has resulted in a better understanding of Cost Accounting 2	My home language does not affect my performance negatively
1. Percentage (i.e. performance).	1.00					
38. My attendance at Cost Accounting 2 lectures results in good performance (H1).	0.03	1.00				
39. My age positively impacts on my performance (H2).	0.28**	0.03	1.00			
40. Female students outperform male students in Cost Accounting two (H3).	0.04	0.21**	0.05	1.00		
41. Having achieved good results in grade 12 has resulted in a better understanding of Cost Accounting two (H4).	0.01	0.06	0.29**	-0.03	1.00	
42. My home language does not affect my performance negatively (H5).	0.08	0.18*	0.01	0.10	0.34**	1.00

** Significant at the 0.01 level.
* Significant at the 0.05 level (2-tailed).
Notes:

- Having a better understanding of course content leads to achieving stronger academic results.
- Percentage refers to percentage achieved in Cost Accounting two by that particular student and is used as a measure of performance.

All variables which show significant results are indicated by a * or **. A correlation between variables implies that a change in one variable will result in movement of another variable. When variables are uncorrelated, the change in one will not result in a change in the other. The purpose of performing a correlation analysis is to test the strength of the relationship between variables being analysed. In addition, if a correlation produces a positive result, it implies that both variables increase and decrease at the same time when measured against each other. In contrast, a negative correlation provides the opposite

effect, an increase in one variable will results in a decrease in the other variable and vice versa (Greener 2008:62).

a) Attendance

The relationship found between attendance in Cost Accounting two lectures and the percentage achieved in the module produced a correlation which was positive at r = 0.03, but not significant.

b) Age

The next comparison between percentage achieved in Cost Accounting two and age indicated a strong positively correlated significant relationship between variables of r = 0.28**. A correlation between age and student attendance was positive, yet not significant (r = 0.03).

c) Gender

The next correlation was between female students and performance (r = 0.04), attendance (r = 0.21**) and age (r =0.05). All these correlations were positive. There was only one relationship with females' attendance that correlated significantly with attendance (r = 0.21**). This means that female students who performed well felt that it was attributed to consistency in attending lectures.

d) Grade 12 results

Thereafter, the impact of grade 12 results on percentage achieved, attendance, age and gender were tested. Accomplishing good results in grade 12 has a direct positive relationship to the percentage achieved in Cost Accounting two (r = 0.01), attendance (r = 0.06) and age (r = 0.29**). However, when testing grade 12 performance against gender, an inverse relationship was recognised (r = -0.03). This means that female students, who performed well in grade 12, do not indicate that they would outperform male students in Cost Accounting two. However, only age was significantly correlated with performance in grade 12 at $p < 0.01$.

e) Language

Lastly, the relationship between language and percentage achieved, attendance, age, gender and grade 12 results were tested. Language and attendance show a positively correlated relationship (r = 0.18*). The relationship between language and attendance show that language does not impact on performance but attendance has a positive impact

on performance. Also, language and grade 12 results show a strong positive correlation (r = 0.34**). The relationship between language and grade 12 results shows that achieving good results in grade 12 impacts positively on performance, irrespective of language of instruction. The relationship between language and attendance was statistically significant at $p < 0.01$ whereas the relationship between language and grade 12 results was significant at $p < 0.05$ level. Furthermore, language and age show a positive parallel relationship with performance (r = 0.01).

Table 5.27 showed statistically significant relationships between some variables using correlations. A correlation matrix is not sufficient when analysing relationships between variables. Hence, regression analyses were performed in order to prove or disprove the stated hypotheses. The next section discusses the regression analyses.

5.5.2 Regression analysis

Table 5.28 shows the results of the regression analysis using the statements listed in the questionnaire.

Table 5.28: Regression analysis					
Coefficients					
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
H^1: My attendance at Cost Accounting 2 lectures results in good performance	-0.09	1.03	-0.01	-0.08	0.94
H^2: My age positively impacts on my performance	2.49	0.72	0.32	3.44	0.00***
H^3: Female students outperform male students in Cost Accounting 2	0.11	0.65	0.02	0.17	0.87
H^4: Having achieved good results in grade 12 has resulted in a better understanding of Cost Accounting 2	-1.46	1.29	-0.11	-1.13	0.26
H^5: My home language does not affect my performance negatively	1.56	1.04	0.15	1.50	0.14
Positive values indicate a directly proportional relationship between the variables and a negative value indicates an inverse relationship. All significant relationships are indicated by a * or **. ***Significant at the 0.01 level. ** Significant at the 0.05 level. * Significant at the 0.10 level.					

In Table 5.28, the independent variables (attendance, age, gender, grade 12 results and language) were tested against performance in Cost Accounting two (dependant variable) using regression analysis. From Table 5.28, H^1 shows an inverse relationship between attendance and performance (B = -0.09). Likewise, H^4, which theorised between grade 12 results and performance, also shows an inverse relationship (B = -1.46). This finding implies that students with higher attendance did not necessarily obtain better results. Nor did they feel that grade 12 achievement was a factor related to success in Cost Accounting two. H^1 and H^4 did not show any statistical significance in Table 5.28.

Age (H^2) shows a significant positive B = 2.49 value. Therefore, it seems that there is no difference in performance when age is a factor. H^2 shows a statistically significant relationship of $p < 0.01$ in Table 5.28. Thus, it seems that age does not affect student performance in Cost Accounting two. As a result, H^2 is accepted.

Regression analyses are very much influenced by the variables. Consequently, mature aged students were removed from the analyses as they were a small number of students (26 of 158) which may have influenced the results of Table 5.28. By removing these students, a more precise indication of relationships between variables are achieved. Appendix three provides a summary of respondents who fell into the traditional- and mature-aged categories.

Table 5.29 shows a regression analysis after the mature-aged students were removed from the analysis.

Table 5.29 provides further analyses which were only applied to traditional students.

Table 5.29: Regression analysis excluding mature-aged students

Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
H¹: My attendance at Cost Accounting 2 lectures results in good performance	3.04	1.16	0.28	2.62	0.01***
H²: My age positively impacts on my performance	0.62	0.81	0.08	0.76	0.45
H³: Female students outperform male students in Cost Accounting 2	0.98	0.59	0.16	1.66	0.10
H⁴: Having achieved good results in grade 12 has resulted in a better understanding of Cost Accounting 2	-2.30	1.21	-0.20	-1.91	0.06*
H⁵: My home language does not affect my performance negatively	2.37	0.99	0.25	2.39	0.02**

Positive values indicate a directly proportional relationship between the variables and a negative value indicates an inverse relationship. All significant relationships are indicated by a * or **.

***Significant at the 0.01 level.
** Significant at the 0.05 level.
* Significant at the 0.10 level.

The first hypothesis states that higher attendance at lectures is most likely to produce better results. Table 5.29 shows that attendance may result in better performance in Cost Accounting two (H¹). Also, attendance is statistically significant ($p < 0.01$) and shows a

strong beta coefficient (B = 3.04) between attendance (independent variable) and performance (dependant variable). The regression analysis indicates that attendance shows a positive parallel relationship with performance in Cost Accounting two. Therefore, H^1 can be accepted.

Next, the second hypothesis states that there is no difference between students' performance and age. Table 5.29 shows no statistical significance (0.45) between age and student performance. Previously, age had shown significance in Table 5.28, before removing mature-aged students from the analyses. Thus, age is not a contributing factor to student performance. Therefore, as mentioned before, H^2 can be accepted.

Thereafter, the third hypothesis states that females outperform male students in Cost Accounting two. The beta coefficient shows a positive relationship (B = 0.98) between gender (independent variable) and performance (dependant variable). However, H^3 did not show any statistical significance when tested using regression analyses. Therefore, H^3 is rejected.

The next hypothesis tested was grade 12 results. H^4 states that performing well in grade 12 will result in performing well in Cost Accounting two. The relationship between grade 12 performance (independent variable) and performance in Cost Accounting two (dependant variable) shows a negative beta coefficient of -2.30. Students did not feel that their grade 12 results had an impact on their performance in the module. The regression indicates a significant negative relationship of $p < 0.10$. Therefore, an inverse relationship exists between these variables. It seems that grade 12 performance does not influence performance in Cost Accounting two as hypothesised. Therefore, H^4 can be rejected.

The final hypothesis tested in Table 5.29 was language. H^5 theorised that students who speak English as their home language will perform better in Cost Accounting two than those who do not. Table 5.3 indicated that only 29.7% of the population tested spoke the language of instruction as their home language. The regression analyses in Table 5.29 show that the statement on language is statistically significant ($p < 0.05$). Furthermore,

the beta coefficient (B = 2.37) reveals that the statement on language (independent variable) has a strong positive effect on performance in Cost Accounting two (dependant variable). Students did not feel that their home language had a negative effect on their performance in the Cost Accounting two. Therefore, H^5 is rejected.

Lastly, age (H^2) and gender (H^3) did not show any statistical significance in Table 5.29. The next table will show a summary of the discussion above.

Table 5.30 presents a summary of the above findings.

Table 5.30: Summary of hypotheses testing		
Hypotheses	Significance found in table	Accepted/ Rejected
H^1 - Attendance	5.29	Accepted
H^2 - Age	5.28	Accepted
H^3 - Gender	None	Rejected
H^4 - Grade 12 results	5.29	Rejected
H^5 - Language	5.29	Rejected

Attendance is, therefore, a contributing factor to student performance. The next section provides an overview which concludes the current chapter.

5.6 Overview

In this chapter, background information was presented and discussed first. Frequency tables, which used cross tabulation, were shown in terms of gender. Table 5.1 indicated that the target population was made up of 90 (of 155) females and 26 (of 155) mature-aged students. Section 5.3 provided a summary of percentages achieved in Cost Accounting two. Most of the respondents scored in the range of 50% to 70% for the module. Thereafter, home language was analysed; 58.9% of students spoke isiZulu as their home language. Only 29.7% of respondents spoke the language of instruction as a first language, that being English. Furthermore, attendance at lectures was analysed. Table 5.4 showed that 78.4% (of 153 responses) of students indicated that they attend

four lectures per week. Table 5.5 asked students to indicate their employment status and showed that four students, of 151, were employed.

Lastly, section 5.3 looked at grade 12 achievement in Mathematics, Accounting and English. Table 5.6 showed that more respondents took Mathematics (69.3%) in grade 12, as opposed to Mathematics literacy. Table 5.7 showed that most students scored between 51-80% for Mathematics. However, female students scored mostly between 51-60%, whereas male students scored mostly between 61-70%. Table 5.8 showed that most students (88%) took English home language in grade 12. Table 5.9 showed that more male students scored between 61-70% (54.7%), whereas more female students scored between 51-60% (53.3%) for grade 12 English. Finally, Table 5.10 showed students' scores for grade 12 Accounting. Most students (45.6%) scored between 61-70% for grade 12 Accounting. Within genders, Table 5.10 showed that 51.6% of males and 41.4% of females scored in the aforementioned range.

Section 5.4 looked at students' perceptions that impact on their performance in Cost Accounting two. For this section, data were analysed in terms of gender and language. The Mann-Whitney U test showed the statistically significant differences in responses between groups. When statements on language were analysed, Table 5.11 and 5.12 showed that most female students and English students felt strongly that the language of instruction does not negatively affect their performance. Also, Table 5.12 showed that non-English speaking students prefer being taught in their home language. Table 5.13 showed that students mainly miss lectures due to illness. Thereafter, Tables 5.14 and 5.15 showed that students would improve their attendance if their course mark were dependent on attendance. Also, non-English speaking students showed that they preferred self-study using textbooks and blackboard rather than attending lectures.

Tables 5.16 and 5.17 analysed mature-aged and traditional students. The study found that mature-aged female students and mature-aged English speaking students felt that adjusting to being a student after many years is difficult. In addition, mature-aged English

speaking students indicated that understanding subject content is more difficult, but they are determined to perform well.

Thereafter, Tables 5.16 and 5.17 showed responses to statements that related to traditional students. Male traditional students felt they are mature enough to understand the importance of an education, whereas female students did not agree. Overall, traditional students felt that learning was easier because they are traditional students.
Table 5.19 showed students who took Mathematics in grade 12 achieved mostly a pass of 61-70% in grade 12 Accounting, as opposed to those who did Mathematics literacy (51-60% for grade 12 Accounting). Similarly, Table 5.20 showed that those students who took English home language scored higher than those who took English first additional language in grade 12 Accounting.

Tables 5.23 and 5.24 showed students' views on the possible factors which influence their performance. Attendance was shown as a positive influence of student performance. Male students indicated that age positively affects their performance, whereas English speaking students showed disagreement with the statement. In addition, female students felt that their performance was better than male students in Cost Accounting two. English speaking students also showed some agreement to the aforementioned statement. Additionally, some male students indicated that their grade 12 performance assisted in the understanding of Cost Accounting two.

Lastly, Tables 5.25 and 5.26 showed a proposed solution, which provided an indication of attendance increasing substantially, if made compulsory. Students also felt that the proposed solution may assist in them being well prepared for tests and examinations. Table 5.26 presented numerous aspects which students felt that undesirably influenced their performance. Attendance was the highest-ranking factor identified by students.

Section 5.5 tested the hypotheses for attendance, age, gender, language and grade 12 results using a correlation matrix (5.5.1) and regressions analysis (5.5.2). A correlation matrix was used to test if there were relationships between the variables. Table 5.27

showed that the relationship between attendance (r = 0.03) and performance was positive, but not significant. However, the relationship between age and performance was positive and significantly correlated (r = 0.28**). The relationship between age and gender was positive, but not significant (r = 0.03). Gender and performance, attendance and age showed positively correlated relationships. However only gender and attendance were positively significantly correlated (r = 0.21**). Grade 12 results and age was positively and significantly correlated at r = 0.29**. Whereas grade 12 results and gender were negatively correlated (r = -0.03). but not significant. Language showed two positively significant relationships with attendance (r = 0.18**) and grade 12 results (r = 0.34**). The next section (5.5.2) showed the regression analysis performed with (Table 5.28) and without (Table 5.29) mature-aged students.

The regression analysis tested the independent variables against the dependant variable. This was done in an attempt to prove the five stated hypotheses. Table 5.28 showed two inverse results between performance and attendance (B = -0.09) and performance and grade 12 results (B = -1.49), but no significant relationships. H^2, age, was positive and statistically significant (B = 2.49). Therefore, H^2 was accepted. When mature- aged students were removed from the regressions analysis, Table 5.29 showed the following statistically significant results.

H^1 showed statistical significance at $p < 0.01$. H^1 stated that higher attendance produces better results and was, therefore, accepted. H^3 stated that females outperform males in Cost Accounting two. H^3 did not show any statistical significance and was, therefore, rejected. H^4 tested if grade 12 results positively influenced performance in Cost Accounting two. The regression analysis showed a significant negative result for H^4 and was, therefore, rejected. Finally, H^5 showed that students did not feel disadvantaged by their home language. Therefore, H^5 was rejected.

Table 5.30 showed a summary of all hypotheses which were accepted (H^1 and H^2) and those hypotheses which were rejected (H^3, H^4 and H^5).

The next chapter provides the conclusions and recommendations. In addition, recommendations based on the findings of this study are suggested for improvement of student performance as well as suggestions for future research.

CHAPTER SIX

Conclusion and recommendations

6.1 Introduction

The preceding chapter presented and interpreted the data collected and analysed for the current study. This chapter, firstly, reiterates the aim of this study, which is to examine the factors which affect student performance. This is followed by a discussion detailing how the research objectives were met by this study. Thereafter, a brief summary of the five chapters is presented. Recommendations based on findings of chapter five are suggested. Moreover, the chapter highlights the contribution of the study as well as suggestions for further research. Lastly, the limitations of the study are presented. The chapter concludes with an overview of the dissertation.

6.2 Aim of the study

The aim of this study was to identify the factors affecting the performance of CMA students in Cost Accounting two at the DUT. The aim was achieved by setting out two research objectives.

6.3 Research objectives addressed

For this study, two objectives were generated. The address the first objective, which was to identify the factors affecting CMA student performance, a literature review was conducted in chapter two and chapter three of this study, and thereafter the factors were empirically investigated in chapter five. The second objective which was to determine if these factors have a significant association with a student's performance in Cost Accounting two was also addressed in chapter five using hypotheses testing.

6.3.1 Objective one

Objective one of this study was to identify the factors which may impact on the performance of CMA students studying Cost Accounting two. This is discussed below in two parts.

a) Identifying factors which impact on performance using a literature review:

A literature review was used to first identify and classify the factors assumed to impact on academic achievement of Cost Accounting two students. Accordingly, these factors were identified as attendance, age, gender, language and grade 12 results.

Chapter three discussed studies which used attendance as a factor affecting student performance. Three identified studies found no relationship between attendance and student performance (Johnson *et al.* 2002; Young 2004; Clark and Latshaw 2012). Thereafter, chapter three showed studies which used age as a factor impacting on performance. Some studies found younger students outperform older students (Hoskins *et al.* 1997; Papageorgiou and Halabi 2014; Jansen and De Villiers 2016), whereas other studies found that older (mature-aged) students performed better (Richardson 1994; McCune *et al*. 2010). In terms of gender, some studies found no difference between the performance of male and female students (Durden and Ellis 1995; Papageorgiou and Halabi 2014). The literature on grade 12 results showed many studies found grade 12 results to be a strong predictor of success at tertiary level (Evans 2000; Du Plessis *et al.* 2005; Marks 2010). Lastly, some of studies, which used language as a factor that impacts on student performance, found that the language barrier does affect student performance (Howie 2003; Brock-Utne 2007).

The next section discusses how the identified factors were further analysed using survey research.

b) Survey of factors which impact on student performance

The second part of objective one was addressed using a questionnaire. Section 5.4 analysed students' perceptions of statements that incorporated factors influencing their performance in Cost Accounting two. The data collected were analysed according to gender and home language.

The analyses on attendance found that, although most students indicated regular attendance, male students attend more lectures than female students. Students indicated

overall agreement with attending lectures regularly if their performance was dependent on attendance. In addition, most students felt that information communicated during lectures could be picked up from a textbook. Interestingly, English speaking students did not feel the same. However, non-English speaking students indicated that they prefer lectures to studying online or self-study.

Statements on age found that most students in the population are traditional (younger) students. Mature-aged students were not as many, but more female students were of a mature-age as compared to male students in this category. Most mature-aged students felt that adjusting to being a student, after a long period has passed, is challenging. It was found that mature-aged English speaking students felt that subject content is difficult to understand. Although traditional male students indicated that their age group understands the importance of being educated, female traditional students did not feel the same. Overall, traditional students felt that learning is easier for a traditional student. This was because they are familiar with the teaching and learning process.

The population consisted of more female students than male students. The data on percentage-achieved in Cost Accounting two was analysed according to gender. The study found that more female students outperform male students in Cost Accounting two. However, male students outperformed female students in the higher-ranking categories. An analysis of responses for statements made on gender found that female students were of the opinion that they perform better than male students. Male students did not feel the same.

Students were also required to provide an indication of their grade 12 results in Mathematics, English and Accounting. Most students achieved above average percentages in these subjects. The study found that most students were not certain if their grade 12 results have an impact on their performance at tertiary level. Some male students indicated that their grade 12 performance had a positive impact on their performance.

Students identified with having good articulation of the language of instruction at the DUT. However, although male students indicated that they have a good understanding of English, they also indicated that being taught in English made learning challenging. Furthermore, female students felt that being taught in English did not impact on their ability to learn. In addition, when students' responses to statements made on language was analysed according to gender, all students agreed that they prefer being taught in their home language. Most students indicated that they communicate fluently in English.

An open-ended question found that performance may be affected by other factors, such as lecturers not being on time, subject content, lack of tutorials, lack of a textbook, lectures are too fast paced, tests are tricky and transport issues. These were perceived by students as impediments to their performance in Cost Accounting two. These were not pursued further.

An analysis of the questionnaire provided insight on the factors and their degree of influence on the academic achievement of CMA students studying Cost Accounting two at the time.

The next section discusses how objective two was addressed.

6.3.2 Objective two

Objective two of the study was to determine which factors have an impact on performance. The relationships between the dependent and independent variables was firstly analysed using a correlation matrix. Thereafter, a regression analysis tested the impact the independent variables (attendance, age, gender, grade 12 results, language) had on the dependent variable (performance) in order to test the stated hypotheses.

Five hypotheses were formulated using attendance, age, gender, language and grade 12 results as they were presumed to have an impact on performance. The results of the correlation matrix is discussed under part "a" below, the results of the regression analyses are discussed thereafter (part b).

a) Correlations established

Notable findings from the correlation matrix presented in chapter five are summarised below.

Performance and attendance are positively correlated. However, the correlation established between attendance and performance was not significant.

Performance and age are positively correlated and significant. Student's age showed a similar relationship with student performance. This meant that students felt that their age did not negatively affect their performance.

There was a significantly positive correlation between female students and attendance. Consequently, female students who attended more lectures showed that attendance positively affected their Cost Accounting two performance.

There was an inverse relationship between female students and grade 12 performance. It seemed that female students, who performed well in grade 12, might not perform just as well in Cost Accounting two. However, age and gender did not show any significance. On the other hand, age showed a significantly positive correlation with grade 12 performance. Age had a positive relationship with grade 12 performance. Students do not feel that age negatively influences their performance.

There was a significantly positive correlation between language and attendance. Attendance seemed to have a positive impact on performance, irrespective of the language of instruction. Likewise, language and grade 12 performance also showed a significantly positive relationship with performance in Cost Accounting two. This meant that achieving good results in grade 12 had a positive relationship with performance, irrespective of the language of instruction.

b) Hypotheses tested by regression analysis

In order to address objective two, the study needed to determine which identified factors had an impact on performance. To achieve this, regression analyses were performed. The regression analyses were conducted twice. The first analyses were done on the entire group of respondents who participated in the study. The second analyses excluded mature-aged students from the test as mature-aged students made up a small percentage of the population. More significant results were achieved once mature-aged students were excluded.

H^1 produced statistically significant positive results. It was found that attendance at lectures leads to better performance in Cost Accounting two. Therefore, H^1, which stated that higher attendance at lectures is most likely to produce better results, was accepted.

H^2 produced a statistically significant positive result. The result indicated that age does not affect student performance in Cost Accounting two. Therefore, H^2, which stated that there is no difference between students' performance when compared using age as a factor, was accepted.

H^3 showed a positive result when female students and performance were tested. This indicated that female students perform better in Cost Accounting two. However, no statistically significant results emerged from the analyses of H^3. Therefore, H^3, which stated that female students perform better than male students, was rejected.

H^4 showed a statistically significant negative result. Students felt that their grade 12 performance does not impact on their performance in Cost Accounting two. Therefore, H^4, which stated that an above 60% pass in Mathematics, English and Accounting in grade 12 would result in a student performing better in Cost Accounting two at tertiary level, was rejected.

H^5 tested the impact that a student's home language had on performance in Cost Accounting two. The regression analyses showed a statistically significant positive result.

Students indicated that the language of instruction does not negatively impact on their performance. Therefore, H^5, which stated that students who speak English as their home language will perform better than those who do not, was rejected.

Of the five hypotheses, tested using a regression analyses, two were accepted (H^1 and H^2) and three were rejected (H^3, H^4 and H^5). Objective two of the study was to find which factor significantly impacts on student performance in Cost Accounting two. In addressing this objective, attendance provided the most statistically significant evidence as being a factor which impacts on student performance in Cost Accounting two.

The next section summarizes each chapter of the current study.

6.4 Summary of each chapter

For this section, each chapter from the current study is briefly discussed.

6.4.1 Chapter one

Chapter one began by introducing the research topic, which was an examination of the factors affecting the performance of Management Accounting students at DUT. Thereafter, the background of the study discussed pass rates, similar studies and performance. The problem statement provided the rationale for the study. The aim and objectives directed the creation of the research hypotheses of the study. The research approach indicated that a quantitative paradigm was used for the study. In addition, the research instrument and statistical package used were stated. Thereafter, the significance and the contribution of the study were discussed. Lastly, the outline of the study provided a brief indication of the content of each of the subsequent chapters.

The next chapter discussed the presentation and discussion of identified literature, as well as theories which related to the variables.

6.4.2 Chapter two

Chapter two provided the context and theoretical framework of the study. The context of the study was discussed under four sections. These sections were on the DUT, the Department of Management Accounting, the entrance requirements and Cost Accounting two. Thereafter, performance (dependent variable) was defined and discussed. Lastly, the theoretical framework (ToP) by Elger (2007) provided structure in terms of academic performance and the measurement thereof. In addition to Elger's ToP, Tinto's integration theory, Astin's theory of student engagement and Bean's psychological theory were presented and discussed as part of the theoretical underpinning for the current study.
The next chapter discussed the literature surrounding the independent variables and discussed each one separately.

6.4.3 Chapter three

Chapter three discussed attendance, age, gender, language and grade 12 results separately. Many studies have been conducted in the research focus area of the current study (Hoskins *et al.* 1997; Barrow *et al.* 2009; Evans and Farley 1998; Dayioglu and Turut-Asik 2004). These studies have provided valuable findings relating to the independent variables of this study.

The chapter examined literature relating to students' attendance and performance. Studies indicated that learners who do not attend class regularly are sacrificing valuable information and notes, which are supplied during lectures. This implied that poor attendance leads to less information and study material, which ultimately leads to reduced performance (Teixeira 2013; Alanzi 2015). H^1 stated that there is a positive relationship between student attendance and student performance.

Thereafter, literature on academic performance of mature-aged students compared to traditional students was examined. Mature-aged students were described as being older in age, whereas traditional students were described as being younger. Some studies found that mature-aged students possess certain characteristics that are essential to succeed at tertiary level (McCune *et al*. 2010; Richardson 1994). A few of these

characteristics are responsibility, proper time management skills and motivation. Furthermore, traditional students possess certain skills which are essential to succeeding at tertiary. H^2 stated that there is no difference between students' performance and age.

The next section presented literature that investigated the academic performance according to gender. Various studies that focused on the effect of gender on student performance were presented and discussed. Studies that favoured higher female academic performance were Borg and Stranahan (2002a), Marks (2008) and Marks (2010). Studies that favoured male academic excellence were Borg and Stranahan (2002b), Nyikahadzoi *et al.* (2013) and Jansen and De Villiers (2016). Finally, research similar to this study indicated that there is no difference in performance when gender is a factor (Papageorgiou and Halabi 2014). H^3 stated that female students perform much better than male students.

The fourth factor was grade 12 results. Grade 12 results referred to the grades that students achieved during their final year in high school. Studies on the impact of high school performance on tertiary performance produced similar and dissimilar findings. Some studies (Bitzer *et al.* 2004) found high school achievements had no impact as average students had performed well at tertiary level. However, Marks (2010) found high achievers from grade 12 continue to be high achievers at tertiary level. This section aimed to determine whether the results achieved by students in high school had an impact on how they performed at university. H^5 stated that an above 60% pass in Mathematics, English and Accounting in grade 12 would result in a student performing better in Cost Accounting two at tertiary level.

Lastly, literature on the impact of the language barrier on student performance was examined and presented. Studies, such as (Brock-Utne 2007), concluded that teaching and learning is more effective if the language of instruction is the home language of the student. The findings by Brock-Utne (2007) were aligned to studies conducted by Rosenthal *et al*. (1983), Howie (2003) and Du Plessis *et al.* (2005). However, Marks (2010) found contradictory results to Rosenthal *et al*. (1983), Howie (2003) and Du Plessis

et al. (2005) and Brock-Utne (2007). H^4 stated that students who speak English as their home language will perform better than those who do not.

The next chapter discussed the research methodology used in the current study.

6.4.4 Chapter four

The former chapter discussed the literature that related to the independent variables. Chapter four discussed the methodology utilised for the investigation into student performance and the factors thereof. The chapter began by reviewing the research aims, objectives and the hypotheses. Thereafter the research design provided the methodological map, which guided the study. The study used a quantitative paradigm for the research approach. The research strategy used was a questionnaire. A cross-sectional one-shot study was utilised. A target population of 960 students were registered for Cost Accounting two at the time. However, only 180 CMA students were selected. The measuring instrument, which was the questionnaire, was made up of open/closed-ended questions and Likert scale questions. A thematic approach was adapted for the analyses of the questionnaire. There were seven themes throughout the questionnaire.

In addition, the consent letter and letter of information presented to respondents were explained. Pre-testing and pilot testing of the questionnaire were discussed. The recruitment process and methods of collecting data showed that difficulties were experienced in collecting the data, however, the sample size was deemed sufficient. A sample of 158 valid questionnaires were used for the analyses. Furthermore, data analyses indicated that the statistical software used was SPSS 23.0. The study used descriptive statistics. Thereafter, the statistical preparation and analyses of the data were explained. The study used cross-tabulation, Pearson's correlation coefficient, Spearman's rho, Kolmogorov Smirnov test, Chi-square test, Mann-Whitney U test, correlation matrix and regression analyses. The limitations, reliability and validity of the study were presented and explained. Finally, the chapter explained the confidentiality and ethics which were relevant the study.

The Mann-Whitney U test was used to find the statistically significant differences in responses between groups in the analyses. Thereafter, the five hypotheses were tested using a correlation matrix and regression analyses. These are further explained in the section below.

6.4.5 Chapter five

This chapter first presented and analysed the demographical data of respondents. The background information was divided and presented according to gender. Furthermore, information collected indicated that the population consisted of mostly female students and traditional students. Thereafter, students' perceptions of factors influencing their performance in Cost Accounting two were analysed according to gender and home language. The analyses of the significant differences in student responses were done using the Mann-Whitney U test. Some of the statistically significant findings of the analyses are shown below.

The study showed that most students did not feel that the language of instruction affected their performance. However, female students and English speaking students felt more strongly that language of instruction affected their performance. In addition, non-English speaking students preferred to be taught in their home language. With regards to attendance at lectures, the study showed that most students felt that they would attend more lectures if their course mark depended on their attendance. Furthermore, most students felt that information communicated during lectures may be picked up from a textbook, but English speaking students did not agree with this statement. Furthermore, non-English speaking students indicated that they preferred lectures rather than self-study.

When age was analysed, mature-aged female students and mature-aged English speaking students felt that adjusting to being a student after a period of time is difficult. Although mature-aged English speaking students indicated that they are determined to perform well, they also felt that subject content is difficult to understand. Male traditional students felt that they are mature enough to understand the importance of an education

but female students did not seem to agree. Traditional students indicated that learning was easy for them because of their age and recent high school education.

An analyses of student responses on grade 12 results showed that students who took Mathematics in grade 12 achieved 61-70% in grade 12 Accounting, whereas those students who took Mathematics literacy achieved 51-60% in grade 12 Accounting. Similarly, those students who took English home language scored mostly between 61-70% in grade 12 Accounting. Thereafter, students' responses to statements made on the impact of grade 12 Mathematics, Accounting and English on their performance in Cost Accounting two were analysed and discussed. Most students felt that their grade 12 subjects had a positive impact on their performance in Cost Accounting two. No significance was found for these results. Students also indicated that tertiary examinations are more difficult; therefore, they would need to work harder in order to pass.

Overall, responses on attendance at lectures showed that students felt that attendance positively influences their performance. Concerning age, male students indicated that age positively influences their performance, whereas English speaking students did not feel the same. Female students indicated that they perform better in Cost Accounting two than male students. Lastly, male students indicated that their prior schooling (grade 12) helped them with their understanding of Cost Accounting two.

Statements, which were related to a proposed solution to improve attendance and performance, showed that most students felt that their attendance would improve. Students indicated that poor attendance negatively affected their performance. Thereafter, the hypotheses testing was presented, analysed and discussed.

A correlation matrix was used to find statistically significant relationships between variables. The analyses used responses received from students to statements made on each independent variable and the dependent variable. The most notable relationships were between age and attendance, gender (female) and attendance, grade 12 results and age, language and attendance, and, lastly, language and grade 12 results.

Finally, the hypotheses generated for the study were tested using regression analysis. The analysis first incorporated the complete group of respondents. One positive significant result in age was found. Nevertheless, factoring in multicollinearity, mature-aged students were removed from the analyses of the variables. The regression performed, thereafter, found three significant relationships amongst the dependent and independent variables.

The following hypotheses were accepted:
H^1- Higher attendance at lectures is most likely to produce better results; and
H^2- There is no difference between students' performance and age.

The following hypotheses were rejected:
H^3- Female students perform much better than male students;
H^4- An above 60% pass in Mathematics, English and Accounting in grade 12 would result in a student performing better in Cost Accounting two at tertiary level; and
H^5- Students who speak English as their home language will perform better than those who do not.

The next section of the current chapter suggests recommendations based on the research findings.

6.5 Recommendations based on research findings

The following recommendations are made based on the analysis of results obtained in chapter five:

- There is a need for improvement in the performance of second year students who are registered for the module Cost Accounting two;
- Attendance of students during lectures can be improved by using control methods or reinforcing those which are currently in place. It is suggested that registers are monitored and those students who are frequently absent should be considered at risk of performing poorly. In addition, spot tests, which carry a weighting towards a student's final mark, may encourage higher attendance;

- Another option for lecturers would be to monitor a student's activity on blackboard when additional tasks and assessments are posted online. A report could be generated for those students who fail to keep up with their attendance. When provided with a scenario on compulsory attendance, most students felt strongly that they would attend lectures regularly.
- Even though language was not identified to impact on the performance of students, respondents did indicate that, in some instances, it made learning difficult. In order to address this issue, it is suggested that text books should be provided in isiZulu, or lessons should be provided in students' respective languages. However, logistically, it may not be achievable.

6.6 Contribution of the study

The study contributes to the existing body of knowledge surrounding the factors which impact on student performance. More specifically, the study can be adapted at other UoTs across South Africa. In addition, it was conducted on Cost Accounting two students in a UoT in South Africa; such a study has not been investigated before and adds new knowledge to the existing body literature.

In terms of teaching and learning, the study provides academics with insights of factors which have an impact on student performance in a second year Accounting module. In terms of attendance, this factor provided the most significant correlation to performance. The scenario presented could be implemented by other academics in order to improve attendance which will, in turn, improve performance.

6.7 Further research

Based on the findings and experiences of the current study, the following suggestions for further research are recommended:

- the impact of compulsory attendance on student performance;
- effects of implementing home language as the language of instruction at a UoT;
- linking grade 12 achievement to university achievement;

- why students struggle with second and third year Accounting modules at tertiary institutions; and
- other factors which may have an impact on student performance.

The focus area, being student performance and factors impacting performance, could be studied using many approaches. Therefore, it is not limited to the suggestions made above. For instance, although this study collected data on the secondary schools attended by the students, this data was not used as the spread of different schools was too great. Further research could investigate the effect of the different secondary schooling which exists in South Africa on the performance of students in a tertiary environment. The next section discusses the limitations of the current study.

6.8 Limitations

The current study had the following limitations:

- The study was conducted using Cost Accounting two students in their second year of study towards their diploma at a UoT, therefore, it cannot be generalised to all tertiary institutions and programmes;
- Not all questionnaires were properly completed which may have affected the results;
- Mature-aged students made up only a small percentage of the total population; and
- The students' perceptions of percentages achieved may have been incorrect, as actual results were not used.

The next section provides an overview of the entire dissertation.

6.9 Overview of the dissertation

Chapter one highlighted the need to recognize and analyse which factors had an impact on student performance. Chapter two introduced the context of the study and the dependent variable (performance). This led to the discussion of Elger's ToP, Tinto's integration theory, Astin's theory of student engagement and Bean's psychological theory. These theories formed the theoretical underpinning for the current study. From the

literature surveyed, it was evident that many prior studies identified with age, attendance, gender, language and grade 12 results as having an influence (positive or negative) on student performance.

In light of the above studies' findings, a research instrument was designed using a thematic approach in order to find and prove the significance of the factors that affect the performance of students in Cost Accounting two. After testing five hypotheses, two were accepted (H^1 and H^2) and three were rejected (H^3, H^4 and H^5).

H^1 showed that attendance of lectures positively impacts on the performance of Cost Accounting two students. H^2 showed that age does not influence the performance of CMA students. In terms of gender, H^3 showed that female students perform better in Cost Accounting two, but the findings were not significant; therefore, H^3 was rejected. In terms of results, H^4 showed a negative result, which meant that students grade 12 results did not impact on their performance in Cost Accounting two. In terms of language, H^5 showed that the language of instruction did not negatively affect student performance.

From the study, it is evident that attending more lectures should improve student performance. Therefore, the Department of Management Accounting could increase the number of hours of lectures and ensure compulsory attendance in an attempt to improve student performance.

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APPENDICES

Appendix One: Letter of permission

Letter of Permission

To: Mr D. Govender

Head of Department

Department of Management Accounting

Durban University of Technology

Good Day

I am a Masters student in Cost and Management Accounting at the Durban University of Technology. I have decided to base my research in the Department of Management Accounting. More specifically I wish to focus on the module Cost Accounting two within the department for the purposes of research and academic development.

My provisional topic is as follows:

"Examining the factors which may affect the Performance of Management Accounting Students at the Durban University of Technology".

My research would require contact with students as well as staff.

I would like to request permission to conduct my research within the department.

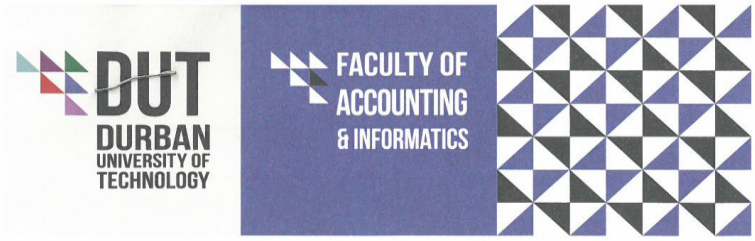
Thank you

Stephanie Caroline Singh

20815909

11/03/2014

Appendix Two: Gatekeeper letter of permission granted



Gate keeper's permission letter:

I Mr D. Govender, Head of The Management Accounting Department at the Durban University of Technology, hereby grant permission to Stephanie C. Singh to conduct her research within the Department of Management Accounting.

Mr D. Govender

13/03/2014

Appendix Three: Letter of information

LETTER OF INFORMATION

Title of the Research Study:

Examining the factors affecting the Performance of Management Accounting Students at the Durban University of Technology

Principal Investigator/s/researcher:

Stephanie Caroline Singh

Btech: Cost and Management Accounting

Co-Investigator/s/supervisor/s:

Professor Stainbank

Brief Introduction and Purpose of the Study

This study will be based on the performance of students within the Department of Cost and Management Accounting at the Durban University of Technology in Durban. The focus of this research will be the results being obtained by students during their first or second year of study. An examination of the results and over all pass rates will take place, as well as an evaluation and analysis of the Factors which affect the results obtained. The findings of this study will be beneficial to the institution, as well as other tertiary institutions.

The researcher needs to look into certain factors which may have an influence student performance.

Outline of the Procedures:

The participants will be required to answer questionnaires.
The questionnaires would take approximately 10 minutes to complete.

Risks or Discomforts to the Participant:

There will be no risks or discomforts, participants would be kept anonymous, and participation would be voluntary.

Benefits:

No known benefits

Reason/s why the Participant May Be Withdrawn from the Study:

If the participant feels uncomfortable participating or has any illness that clouds judgement and responses, the participant may withdraw from the study. There will be no adverse consequences if a participant has to withdraw.

Remuneration:

There will be no remuneration for participants.

Costs of the Study:

The participant will not be covering any costs of the study.

Confidentiality:
All participants will be kept anonymous.

Research-related Injury:

This research will not result in injury and there will be no compensation.

Persons to Contact in the Event of Any Problems or Queries:

Supervisor: Professor L. Stainbank

Details: Stainbankl@ukzn.ac.za

Or

Supervisor: Dr P. Green

Details: paulg@dut.ac.za

Please contact the researcher: 031 373 5351 / 074 404 7927
or the Institutional Research Ethics administrator on 031 373 2900.
Complaints can be reported to the DVC: TIP, Prof F. Otieno on 031 373 2382 or dvctip@dut.ac.za.

Appendix four: Letter of consent

CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, _____ (name of researcher), about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: _____,
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

_____	_____	_____	_____
Full Name of Participant	**Date**	**Time**	**Signature / Right Thumbprint**

I, _____ (name of researcher) herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

_____	_____	_____
Full Name of Researcher	**Date**	**Signature**

Full Name of Witness (If applicable)	Date	Signature

Full Name of Legal Guardian (If applicable)	Date	Signature

Please note the following:

Research details must be provided in a clear, simple and culturally appropriate manner and prospective participants should be helped to arrive at an informed decision by use of appropriate language (grade 10 level - use Flesch Reading Ease Scores on Microsoft Word), selecting of a non-threatening environment for interaction and the availability of peer counseling (Department of Health, 2004)

If the potential participant is unable to read/illiterate, then a right thumb print is required and an impartial witness, who is literate and knows the participant e.g. parent, sibling, friend, pastor, etc. should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document e.g. wrong date or spelling mistake a new document has to be completed. The incomplete original document has to be kept in the participant file and not thrown away and copies thereof must be issued to the participant.

References:

Department of Health: 2004. *Ethics in Health Research: Principles, Structures and Processes* http://www.doh.gov.za/docs/factsheets/guidelines/ethnics/

Department of Health. 2006. *South African Good Clinical Practice Guidelines*. 2nd Ed. Available at: http://www.nhrec.org.za/?page_id=14

Appendix five: IREC consent letter

DUT
DURBAN
UNIVERSITY OF
TECHNOLOGY

Institutional Research Ethics Committee
Faculty of Health Sciences
Room MS 49, Mansfield School Site
Gate 8, Ritson Campus
Durban University of Technology

P O Box 1334, Durban, South Africa, 4001

Tel: 031 373 2900
Fax: 031 373 2407
Email: lavishad@dut.ac.za
http://www.dut.ac.za/research/institutional_research_ethics

www.dut.ac.za

26 October 2015

IREC Reference Number: **REC 73/15**

Ms S C Singh
755 D
12 Zoutpansberg loop
Shallcross
4093

Dear Ms Singh

An Examination of the Factors affecting the Performance of Management Accounting Students at the Durban University of Technology

The Institutional Research Ethics Committee acknowledges receipt of your final data collection tool for review.

We are pleased to inform you that the questionnaire has been approved. Kindly ensure that participants used for the pilot study are not part of the main study.

In addition, the IREC acknowledges receipt of your gatekeeper permission letters.

Please note that FULL APPROVAL is granted to your research proposal. You may proceed with data collection.

Yours Sincerely,

Professor M N Sibiya
Deputy Chairperson: IREC

DUT DURBAN UNIVERSITY OF TECHNOLOGY
2015 -10- 26
INSITUTUTIONAL RESEARCH ETHICS COMMITTEE
P O BOX 1334 DURBAN 4000 SOUTH AFRICA